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MONEY IN ELECTIONS.

It is encouraging that there is at last an effort to stop the assessment of Government employés for political funds; but it should not be forgotten that behind such assessments is the larger fact that political parties require great sums for election purposes. These shameless levies are in truth rather a result than a cause of political corruption. That appointed officials are assessed for political purposes is secondary to the fact that elective officials (or others for them) must pay roundly for election. The election is the initial point in our political system; and so long as elections are to be gained by the use of money, and cannot be gained without it, no subsequent precautions will prevent corruption. Popular government must be a sham and a fraud unless the popular will alone tells in elections.

It has in many parts of the Union come to this,—that only a rich man, or a man who expects to make money illegitimately out of the position, can afford to run for office. The American principle, that every one who devotes his time to the public service should be fairly compensated, is the correct one, as whoever observes the working of the opposite principle in such governments as that of England may see; and on the whole we pay our officials reasonably well. But in the cases of many elective officers, these salaries, minus the expenses of election, leave an

inadequate remuneration, or nothing at all. What does the pay of a United States senator amount to as compared with the cost of many senatorial elections? Or take even the Lower House. Some time ago a rich young man of New York spent between eighty and ninety thousand dollars in a congressional canvass. He was beaten, and the newspapers said it was a popular rebuke to the attempt of a rich man to buy place with money. Perhaps it was, after a fashion; for his opponent, who did get elected, spent only some twenty-odd thousand dollars.

In the recent election a gentleman of high character and national reputation, running for Congress in New York, who had virtually no opponent, and whose election was certain, spent, it is said, ten thousand dollars in what are considered legitimate expenses. He is rich, and therefore, although there was in his case really no contest, was expected to contribute liberally to election expenses. In another case, six thousand dollars was spent by a gentleman, also of national reputation, who is not accounted rich, who has frequently gone through the ordeal of elections, who spent no money save for "legitimate" purposes, and is considered a careful manager. After the election, I heard the friends of a defeated candidate for Congress, in Brooklyn, blaming him bitterly for having made no exertion. He only spent two thousand five hundred dollars.

Thus it is in large cities. But it is doubtful if it is in the large cities that our system of government has really become most corrupt. Sparsely settled Nevada is notoriously a rotten borough, and Kansas, Nebraska, Colorado, and other new States, are little better. And perhaps, for the most flagrant election corruption we must go, not to the large cities with their masses of proletariat voters, nor yet to the new States with their shifting populations, but to the older agricultural communities, where population is most stable, and the voters are in largest proportion of "native American" stock. There is, so "practical politicians" say, more buying of votes among the rural population of Long Island—the descendants of the settlers of the colonial times—than there is in the city of Brooklyn; and in sheer and flagrant corruption there are many agricultural districts of the State of New York that outdo the city.

The Thirteenth Congressional District, composed of Dutchess, Putnam, and Columbia,—long-settled agricultural counties,—has been notorious in this respect. Not long since a candidate for Con-

gress spent one hundred and fifty thousand dollars in his election, beating a competitor who spent seventy-five thousand dollars. In this district substantial farmers, the owners of even five and six hundred acres of valuable land, men of position in their neighborhoods, are said habitually to sell their votes, and the prevalence of the custom is illustrated by a story of a candidate who, going into a country village, asked, "How many voters have you in this township?" "Four hundred," was the reply. "How many of them are floaters?"—*i. e.*, merchantable voters—continued the candidate. "Four hundred," was again the answer. Thanks to the efforts of the Civil Service Reform Association, a branch of which has recently been started in this district, such a stand was made against this corruption in the recent charter election in Poughkeepsie, that the money spent in buying votes was, it is said, reduced one-half, and four persons (of whom one was a deputy sheriff and two were policemen) were arraigned for bribery. They were tried before a judge who is reputed to have spent twenty thousand dollars in getting his place, prosecuted nominally by a district attorney of the same kind, and counsel for the defense made no scruple of asking how many there were in the court-room and in the jury-box who had not been concerned in like practices. The men were acquitted, though nobody seems to have doubted their guilt.

Illustrations might be given from other parts of the Union, but it is not necessary to accumulate illustrations of a notorious fact. What shows most significantly how deeply the virus of corruption is eating into our political system, is that it is only occasionally that the use of money in elections excites comment, and even then the comment can hardly be called reprobation, at least effective reprobation. The prodigal expenditure first alluded to excited some attention, but that mainly because it was a by-election, when there were no other struggles to distract. And no one dreamed of sending either of the candidates to the penitentiary. On the contrary, as a reward for the spending of a fortune in influencing the voters of his district, the loser was sent to represent the American republic at a European court, just as another New York man, who had himself contributed a moderate fortune to the Republican corruption fund in the last Presidential election, and had induced others to contribute, had been previously rewarded by being made our national representative to the French republic. So the Republican who, in the

country district to which I have referred, spent seventy-five thousand dollars in a losing struggle with a Democrat who spent one hundred and fifty thousand dollars, was given an opportunity to "recover his usefulness" as Commissioner of the District of Columbia, while his brother got a contract for soldiers' tombstones.

This is natural. So long as money is necessary for the carrying of elections, the spending of money will be deemed laudable, and those who furnish money may claim what successful parties have to give. As to where the money comes from, that will not much matter. "Beggars cannot be choosers." When Mr. Garfield wrote the "My dear Hubbell" letter, he of course knew that he was asking a ring engaged in swindling the Government to contribute to his election; when Mr. Arthur went down-town to gather in an hour the last five hundred thousand dollars needed to carry Indiana, he of course applied to those who were pecuniarily interested in the retention of power by his party. If Garfield and Arthur had been too "squeamish" to take such money, they would never have reached the Presidential chair. Washington and Jefferson once sat there, it is true. But that was some time ago. Even Lincoln had to trade off Cabinet places to get there, and to wink at the robbery of the nation when mothers were sending their sons to die for her.

The most suggestive assessment during the last presidential election was that levied upon the New York police. These policemen are appointed by a commission intended to be non-partisan, after an examination as to competency, and, once appointed, cannot be removed except upon trial and conviction of misconduct. The commission at the time of the last presidential election, was composed of both Republicans and Democrats. Here, at least, it would be thought political assessments were impossible. Yet the New York policemen were assessed for political purposes, and the money thus raised seems to have been divided between the two parties. Each party wanted money so badly, that it was willing to join its opponent in plundering and dividing. What hope for preventing political assessments by prohibition, when under such conditions political assessments can be levied?

Nor can we hope to cure corruption by mere improvement in administrative machinery. The disease is deeper seated. Growing inequality in the distribution of wealth begets a tendency to

political corruption that can be cured by nothing that does not go to the causes of inequality. And beyond this, we have induced corruption by extending the functions of government too much in one direction, and too little in another.

Our absurd attempt to "protect American industry" by a tariff brings enormous moneyed interests into politics, and, from the blackmailing tide-waiter to the wood-pulp senator, debauches the public service. The Federal internal revenue system, and in large part the revenue systems of our State and local governments, also powerfully foster corruption, while minor misuses of governmental power tend in the same direction. On the other hand, we have in large part abandoned to corporations the true governmental function of coining money, and thus raised up a power of corruption whenever their interests are at stake; and we have in most important part left to other private corporations the true governmental function of opening and maintaining highways. The truth of the axiom that "the Government must own the railroads, or the railroads will own the Government," is seen in every American State, as it is in the halls of Congress or on the bench of the Supreme Court.

Nevertheless, any reform that can be made in administration or political machinery is not only good in itself, but clears the way for more radical reforms. Money *is* power,—power of all kinds; and in normal times it will exert its power in politics just as it exerts its power in the press, and even in the Church. But while the "money power" will always exert an influence upon elections in which it is interested, that power becomes the greater just as money is necessary for elections. When it requires a large expenditure for any candidate to be elected, or even to try the chances of election, it is only such as have money of their own, and are willing to thus spend it, or such as will make engagements with those who have money to spend, that can hope for election or really become candidates, and the popular choice is restricted to the rich or unscrupulous. And when a political party must raise large sums of money, it must turn to those who have money-interests in politics, and become to that extent their servant.

We have laws enough against bribery in elections; but laws against bribery are of the nature of the Pope's bull against the comet. Where some want to buy and others to sell, the bribery goes on all the same. Some of our States have endeav-

ored to prevent the illegitimate use of money in elections by other means. The Constitution of Pennsylvania, for instance, requires the officer-elect to swear that he has spent no money in his election, save for certain prescribed purposes; but the first instance of this requirement having any effect occurred in the last Legislature, when a senator from one of the interior counties confessed inability to take the oath, and his seat being declared vacant, he was reëlected by his constituents without any illegitimate use of money. Perhaps this, and the fact that proceedings have been commenced against an officer who did, as is averred, falsely take the oath, indicate a rising sentiment that may make this clause something more than a dead letter. But the prospect is hardly hopeful.

The fact is, that the illegitimate expenses of elections grow naturally out of the legitimate expenses. The habit of raising and using money for improper purposes begins in the raising and using of money for proper purposes. To prevent the one, it is necessary to do away with the other. There should be no necessary election expenses, either to the candidate or to those who support him. This is required by the theory of our government. In that theory office is not a prize to be struggled for, but a public service to which the citizens freely elect one of their number, and for which any citizen is free to propose another citizen, or to offer himself. Yet, in making it a costly thing to run for office, we not only effect a discrimination between rich and poor opposed to the genius of our institutions; we do worse—we discriminate against the scrupulous in favor of the unscrupulous. Here is the root of the spoils system: In our elections, which are the foundation of our whole governmental structure, we treat offices as things to be paid for.

To make poor and rich alike eligible to office, to prevent public plunderers having an advantage over honest men, to give voters freedom of choice, it is necessary to so order our elections that any citizen may run for office without expense.

Let me dwell for a moment on the point that elections must be inexpensive to give freedom of choice. What we call machine politics springs from the cost of elections. Parties are necessary and useful in popular government; but in political organizations, as in all other organizations, power tends to concentrate in the hands of those who make a business of their management,

and that in proportion as the details and machinery of organization become relatively important. Evils which thus arise can be held in check only by the independence of mere organization on the part of voters,—by the ease with which new organizations can be formed, and candidates can be run outside of regular organizations. Under present conditions, the expenses of election are so great, and organization so costly and important, that it is a very difficult thing to start a new party, and, except in very rare cases, a hopeless, as well as a very expensive, thing for an independent candidate to run. The two great existing party organizations may be compared to two railroad lines. Those who do not like the terms of the one must close with the terms of the other, or else accept an alternative as hopeless as building a railroad for themselves, or trying to walk. And as the competition between railroads only operates at terminal points, so, practically, does the competition between parties only operate as to the heads of tickets. It is only as to a few of their nominees that party managers need take public opinion into account; the fortunes of the rest, save in very rare instances, depend upon the fate of the head of the ticket. As the same general causes operate in both parties to put their practical control into the hands of the men who make of politics a business, the voter is, in most cases, confined to a choice between the nominee of a Republican machine and the nominee of a Democratic ring. And, too, the axiom that railroads will not long compete when they can combine, is as true of our political machines. Nothing is more common than to find the same combination running both political parties, and playing with the people a game of "heads, I win; tails, you lose." Thus freedom of choice is destroyed, and, under the forms of popular sovereignty, we are ruled as completely as though our institutions recognized a governing class.

To get rid of machine rule, we must adopt such measures as will lessen the importance of the political machines in elections by lessening the cost of elections. This must be sought in various ways, adapted to the necessities of the case or the abuses that have grown up. In addition to pointing out this as a direction which effort for the purification of our politics should take, I only wish to offer some general suggestions.

The legitimate election expenses of political parties, which make it necessary first to assess the candidates and then to

assess office-holders, and to levy or solicit contributions, are mainly the expenses of presenting the ticket to voters, and the printing and distribution of ballots. Under the first head fall the expenses of advertising, distributing documents, holding meetings; and in presidential elections, or strongly contested State elections, of banners, transparencies, uniformed clubs, and torch-light processions. Under the second come not merely the expense of printing very many more tickets than can by any possibility be used, and of mailing or sending them to voters, but of employing "workers" to stand at the polls to offer ballots and solicit voters. In some sections, where the payment of a poll-tax is a requisite to voting, it has become customary for the parties to pay poll-taxes; in others, it has become customary to send carriages, not only for sick voters, but for those at work.

To begin with what I conceive would be the greatest single reform. By adopting the Australian plan of voting, now for some years in successful operation in England, we could abolish at one stroke all the expenses of printing and distributing tickets, and all the expense and demoralization consequent on the employment of "workers," and very much lessen the importance of party nominations and party machinery. Under that plan the ballots are printed at public expense, and contain the names of all persons duly registered as candidates. When the voter approaches the poll he is handed one of these ballots. He enters a compartment, where a pencil or pen and ink are provided, and, concealed from observation, strikes off the names of those he does not wish to vote for, or, as in England, indicates by a mark those he prefers, and then folding up the ballot, presents it. Some objections may doubtless be urged against this plan, but they seem to me trivial as compared with the gains. The final date for the registration of candidates should be fixed at such a length of time before election as to secure opportunity for scrutiny, and the lists then advertised at public expense, as election proclamations are now advertised. To prevent the swelling of the lists by trivial nominations, either the number of indorsing voters required to secure registration might be made large, or a fee might be exacted; or, what would probably be still better, a deposit might be required, which, in case the candidate did not receive a certain number of votes, or reach a certain rank in the voting, should be retained for the public treasury, in other cases being

returned after the election.* Thousands of ballots would thus suffice, where now hundreds of thousands are printed. The power of nominating conventions would be reduced to the moral effort of their indorsement, since any candidate indorsed by the required number of citizens would be as well presented to each voter as the nominee of the strongest party convention. Thus the corruptions of primary politics, and the practice of selling votes in nominating conventions, would be destroyed, and the practice of blackmailing candidates by the so-called indorsements of political clubs whose only object is to make money, would also be destroyed. And not only would a large amount of money now required from political committees and from individual candidates be saved, but the practice of buying votes, and that of coercing voters by terror of discharge from employment, would be in large part, if not altogether, broken up by the difficulty of telling how a man voted. There could be no putting a ticket in a man's hand and keeping an eye on it until deposited. And thus, too, the paying of poll-taxes, where that unjust and undemocratic tax is retained, and the sending of carriages for voters, would become risky investments.

As for the banners, the torch-lights, and the marchings of uniformed clubs, which have become such a feature in our presidential elections, there would, I think, be little objection to their prohibition save on the part of manufacturers of "election goods." Each party resorts to them, mainly because the opposing party resorts to them; and a prohibition which would put all parties on the same level and save large expenditures would meet little opposition, and would be, I think, generally approved by public opinion. Pennsylvania has already prohibited torch-light processions within a certain time preceding election, and there is more to be said for absolute prohibition than the mere saving of cost. When a man puts on a uniform, or carries a torch in procession, his self-pride is enlisted in the success of the party, and all appeals to his reason are vain; and these glittering displays of partisanship are not merely disgraceful to a people whose government can only find stable foundations in the reason of the masses, but they are positively injurious.

It seems to me, moreover, that it would be good public policy, and a wise and fruitful expenditure of public money,

* One of the faults of our system that most need reform is the election of many officials who properly should be appointed.

to lessen the expenses of election campaigns by the provision of public halls for political meetings. Every town and city ought to have its public hall or halls, which, like Faneuil Hall in Boston, could be had, under proper restrictions, for any public meeting on the payment of the cost of lighting and cleaning. In the country districts the school-houses are frequently used for such purposes, and in the cities every grammar school might be provided with such a hall, which would have other good uses than for political meetings.

The practice of "treating" by candidates has, in many parts of the country, grown into an evil of formidable magnitude. The old custom of a personal house-to-house canvass has, in our cities, degenerated into a visiting of liquor saloons and "corner groceries." The candidate is expected to visit each groggery in his district, to present his card, and leave on the bar a ten or twenty-dollar bill, for which no change is given, while all the loungers about the place are called on to take a drink. In some places the custom is for him to pay for a keg of beer. So large in the aggregate are the amounts of money thus disbursed by candidates, that in many towns it is said that one-half of the saloons could not be kept open but for the elections. So strong is this custom that even avowed temperance men, when running for office, frequently feel themselves obliged to conciliate the bar-room influence. A very prominent member of a great temperance society was a while ago a candidate for office in Brooklyn. He, too, went the regular rounds. He did not enter the saloons, however. At each one he gave "the boys" who accompanied him a bill, and went around the corner while they left his card and "set up the drinks." At another election, in New York, the president of a national temperance society ran for Congress. He did not go around the corner while the drinks were set up for him by proxy. He ascertained about what each saloon-keeper in his district expected to make out of him, and sent him the money.

It might be worth while to consider how far prohibitory legislation would be useful in preventing this and similar customs by which candidates are bled. As a great deal of the money spent in elections is extorted from candidates rather than voluntarily spent by them, it might to some extent be useful as furnishing an excuse for refusing. But I am inclined to think that a change in the manner of voting, which would dispense with

the "worker" and the "ticket-peddler," and render it impossible to see how any man voted, would so destroy the influence of the groggery in politics as to do away with this species of blackmail, and as well with the many other forms of extortion practiced upon candidates.

No mere improvement of political machinery will suffice of itself to give us pure government; but it ought to be possible to so improve our methods that a citizen can run for office, and be elected to office, without spending a large sum or mortgaging his official acts. It ought to be possible to break up that system which tends to bar all but the unscrupulous rich, or the still more unscrupulous poor, and which demoralizes the people while it corrupts the government.

We need in public service the very highest character and the very best ability, and this need increases with social development. We can command them, if we make character and ability free to come forward and offer their services without derogation to manhood, and the people free to select them: for there is in the public service that which is attractive to the proper ambition strong in every unspoiled man. What most astonishes one who realizes how corrupt and corrupting is the mire of our practical politics, is the virtue and patriotism there yet is, despite it, in our public service.

That democratic government is with us becoming a failure, is clear; that we are driving toward oligarchy and Cæsarism in a new form, may be seen by whoever will look. But they are weak and foolish who say that democracy is therefore condemned, or that universal suffrage must be abandoned. Let us fairly try democracy before we condemn it; let us give universal suffrage opportunity before we vainly talk of curtailing it. Not only is it impossible to go back; but the dangers which menace us come merely from bad adjustments. When there is danger that his sails may be taken aback, the good seaman shifts his helm and trims his yards. He does not chop away his masts. Nor does the good surveyor condemn a stanch ship because she has been suffered to foul with barnacles.

HENRY GEORGE.

THE SUBJUGATION OF THE MISSISSIPPI.

THE Mississippi River Commission was created by Act of Congress, approved June 28, 1879. It consists of seven members, appointed by the President, of whom three are required to be from the Engineer Corps of the Army, one from the Coast and Geodetic Survey, and three from civil life, of whom two shall be civil engineers. It is provided in the act that the commission shall—

> Take into consideration and mature such plan or plans and estimates as will correct, permanently locate, and deepen the channel and protect the banks of the Mississippi River; improve and give safety and ease to the navigation thereof, prevent destructive floods, and promote and facilitate commerce, trade, and the postal service.

The commission was duly organized, and, after consideration of the subject, reported a plan of improvement, which has been adopted by Congress, and for the execution of which an appropriation of $1,000,000 was made by Act of March 3, 1881, and another of $4,123,000 by Act of August 2, 1882, all to be expended below Cairo. Under these appropriations the work is now in progress, its execution being in the hands of officers of the Engineer Corps detailed for that purpose by the Chief of Engineers. Its completion, according to the plans proposed, will require a number of years, and further large appropriations. There is, therefore, added to the interest which belongs to the subject as a great engineering problem, that which attaches to every object of public expenditure.

It is the purpose of this article to set forth briefly the general plan proposed by the commission, and the reasons upon which it rests. In order to a clear apprehension of the questions involved, a short description of the river in its unimproved condition will be useful.

At the city of Cairo, upon the southern extremity of the State of Illinois, are gathered together the waters of five great rivers, viz.: the Missouri, the Upper Mississippi, the Ohio, the Cumberland, and the Tennessee. Between that point and the Gulf of Mexico lies the Mississippi River proper, 1,097 miles in length as it flows. Its course is through an alluvial plain, six hundred miles long and from twenty-five to eighty miles wide. In this basin is embraced an area of 41,000 square miles, of which 32,000 square miles are liable to overflow. Borings made at eighty-three places between Cairo and Vicksburg show one hundred and thirty-one feet mean depth of alluvial soil. From Cairo to the mouth of the Red, the width of the river between banks varies from 1,900 to 13,800 feet, the mean being 4,400 feet. Below the Red the width rarely exceeds 3,500 feet, the mean being 3,350. Between Cairo and Memphis its least depth at low water is five feet; between Memphis and Red River, six feet; and between Red River and New Orleans, fifteen feet. The variation in its discharge is enormous, passing from 100,000 cubic feet per second at low water to 1,600,000 at the highest flood. The range between high and low water mark at Cairo is fifty-two feet; at Memphis, thirty-five feet; at Vicksburg, fifty-two feet; and at New Orleans, fourteen feet. In its greatest floods its water surface stretches from hill to hill, across the entire valley; at extreme low water, it flows between banks from thirty to forty feet high. The depth of its inundation bears no comparison with its area, being, on an average, less than three feet over the arable lands. In the swamps it is much more. Its flood elevation at Cairo is three hundred and twenty-two feet above the sea. Its fall from Cairo to Memphis is about six inches to the mile. Thence to the gulf its fall steadily diminishes, being about one and a half inches per mile at New Orleans. It is one of the muddiest rivers in the world. The greater portion of the sediment received by it at Cairo comes from the Missouri, but this supply is constantly reinforced by the caving of its own banks, which are washed into the river at an estimated rate of 5,000 acres per annum.

All plans for the improvement of the Mississippi that have been prominently discussed rest upon one of two theories: one, that the remedy for the evils existing consists, essentially, in the concentration of the water of the river and the equalization of its flow; the other, that it consists in the subdivision and

diffusion of its volume. The former theory is the one held by the commission and adopted by Congress, though the other has advocates, whose views continue to be urged in Congress and through the press.

There are numerous opportunities to let out of the channel of the Mississippi large portions of its water. The Atchafalaya, which receives its waters from the Red River, at a point only six miles distant from the junction of that river with the Mississippi, is there several feet lower than the Mississippi. At the present time the water of the Red rarely reaches the Mississippi at all, but, for the most part, flows down the Atchafalaya, augmented by a large outflow from the Mississippi. It is only when the Red is high and the Mississippi low, that there is any flow from the former to the latter. The difference of level between the Mississippi and the Atchafalaya increases as they descend, so that at Plaquemine the difference is twenty-two feet, and the distance between them eleven miles. On the east bank, at Bonnet Carré, the difference of level between the river and Lake Pontchartrain is twenty feet, and the distance between them five miles. At Lake Borgne the difference of level is fourteen feet and the distance six miles. So that it is quite possible to make outlets by which the flood-water, or, for that matter, all the water of the Mississippi, could find its way to the gulf by shorter lines and lower levels than those of the present river. And when men stand appalled at the sight of its devastating floods, the suggestion of quick relief by outlets seems at first sight so practicable and reasonable that it is not strange that it should find favor in many minds.

The reasons which lie against this theory require some thought for their clear apprehension, but rest, as is believed, on well ascertained laws.

The three most difficult factors in the problem are, the wide variation in the volume of the river's discharge, the quantity of solid matter transported by its current, and the softness of its banks. If any one of these three elements were absent, the questions presented would be comparatively simple.

To contain the river at its flood requires a great channel. Its banks are so friable that its constant tendency is to make itself room by tearing them down. When the flood subsides the material of which they were composed is found scattered over the broad channel in obstructing bars and shoals. Over and

among these the low-water river has to make its way by such tortuous and changing path as it can find or make for itself. It is then that navigation becomes difficult and dangerous. There is water enough in the river at its lowest stage to furnish ample depth for navigation, if it were confined in a channel of suitable width; and it would make and maintain such a channel for itself, if it were not for the interference of the floods.

The problem of the river's improvement comprehends, therefore, in its broadest sense, these two requisites — a high-water channel capacious enough to contain its floods, and a low-water channel narrow enough to afford the depth necessary for navigation. And the more nearly identical in location these can be made, the more permanent and perfect will be the improvement attained.

In the consideration of any plan for the accomplishment of these ends, it is to be remembered that there are very rigid limits to the possibilities of engineering methods applicable to the case. To build upon a foundation of bottomless alluvium any breakwater or training-wall of stone or timber, that shall withstand the floods that pour down from the north like an ocean let loose, is impossible. To dig and keep open a channel for a river that flings down in its own pathway a sand-bar a mile square as though it were a handful of ashes, is equally impossible. Hence, if at any point a deeper channel is needed, the river must be compelled to dig it; if a new bank is needed, the river must be coaxed to build it. Its own Titanic hands are the only instruments equal to either task.

If any one will set a tumblerful of the coffee-colored water of the Mississippi where it will remain undisturbed for twenty-four hours, he will find, at the end of that time, a teaspoonful of mud in the bottom of the tumbler, while the water will be comparatively clear. If he had kept the water in motion all the time he would have found it as turbid as when he took it from the river, and no deposit at the bottom. In this tiny experiment is illustrated the most important law of the Mississippi River's life, viz.: that the power of water to sustain and transport sediment depends upon its motion. The exact relation between the velocity of moving water and its silt-carrying power is not ascertained. It varies with the size and specific gravity of the particles. But enough is known to warrant the general statement that every diminution of the velocity of a running stream dimin-

ishes its silt-transporting capacity. It is not necessary, in order to produce this result, that there shall be a cessation of motion in the water; a diminution of its rate is sufficient.

The operation of this law is universal and invariable, on the largest scale and on the smallest. The miniature torrent that sweeps down the plowed furrow in a hill-side field scours its bed clean as long as it maintains its headlong velocity. But when it slackens its course at the foot of the slope, it throws down its load of sand and loam in an instant. The delta which forms at the mouth of every sediment-bearing river is the same phenomenon on a larger scale.

Upon the Mississippi River the traveler is never for a moment out of sight of visible evidence of the operation of this law. The following examples will be familiar to any one who has been upon it. In the outer curve of every bend, where the current is swift and strong, the channel is deep and clean. On the inner side of the return curve there is slack water and a bar. Wherever the channel is narrow and deep, there is a high velocity and no deposit of sediment. Where it is excessively broad and shallow, bars accumulate rapidly.

At a bank full stage the river has a rapid current and is heavily loaded with sediment. At the overflow stage the water escaping laterally over the banks is suddenly checked in its velocity, and immediately begins to drop its load, leaving a diminishing deposit as it recedes. To this layer the next flood adds another, each being thickest at the margin next the river, where the escaping water experiences the first diminution of its velocity. In this way the river builds up its own banks by overflow; and in consequence of this method of building them they are highest nearest the river, the receding declination sometimes reaching twelve feet in a mile, and being rarely less than five.

Following the course of great overflows through the forests adjacent to the river, the observer will find on the farther side of trees, logs, and other obstructions, sand reefs and areas of deposit marking every place where the advancing water was checked in its velocity.

It occasionally happens that the river cuts off a long bend by a short channel across its neck, leaving a horseshoe-shaped section of the old channel unused. At the open ends of this abandoned channel the water in it mingles with the current flowing past, and so has a gentle inward and outward flow as the

river rises and falls. The consequence is a deposit of sediment at the entrances of the abandoned channel, by which they are ultimately filled up and cut off entirely from the new channel, forming deep, clear, crescent-shaped lakes. There are many such lakes in the valley, some of them now several miles from the river. Such a cut-off occurred at a bend opposite Vicksburg in 1876, leaving the city upon one arm of the abandoned bend. The lower end of that arm is already filled up to the height of twenty-five feet above low water, and fifty feet above the old bottom, leaving the city's wharves and elevators a mile and a half inland at ordinary and low stages.

By shiftings of the channel, the formation of islands, and other causes, the subsidiary channels, called chutes, are formed in large number. If a swift current set through a chute, it enlarges; if a sluggish current flow through it, it fills with sediment. Sloughs and outlets leading out of the river into the swamps, in which the free flow of water is obstructed by willows, are often permanently closed in the same manner.

As the river elongates its bends by caving off the outer bank, there is commonly formed a sloping bar on the inner bank, which advances as the outer bank recedes. As fast as this bar rises above ordinary low water, it is covered by a growth of willows. At high stages, the water flowing over the bar is obstructed by this growth, and successive deposits of sediment are thus caused, which ultimately build the bar up to the full height of the adjacent banks. By this process the river shifts its channel, tearing down one bank and building up the other as it goes.

Some of the methods of channel improvement now in use have been copied from the processes of nature just described. When it is sought to narrow an excessively wide channel, permeable screens, made of piles and interwoven brush or poles, are set on the bar where it is desired to form new banks, at intervals of a thousand feet or less. The water, in flowing through these screens, loses so much of its velocity that it drops its sediment very rapidly after passing them. The effect produced by such structures is sometimes quite remarkable. In favorable localities a fill of forty feet in depth has resulted in a single season. At Horsetail Bar, below St. Louis, may be seen an area of more than a thousand acres of land, which has been built up from the river-bed to an average depth of twenty-five feet by the means

just described. A mere line of piles, eight feet apart, will often produce a heavy deposit below them.

These numerous examples have been cited in order to illustrate and enforce the proposition stated at the outset: that the greatest law of the river's life is that it shall be forever laden with a burden which slips from its grasp the instant it loiters by the way. The whole valley is itself the result and the proof of the existence and the operation of this law. There is not a shovelful of earth in all its square miles that has not been dissolved in water, and carried by water to the point where its journey ended, for want of velocity to carry it farther. Every grain of sand, every drop of water, every inch of movement, every low stage, every high stage, every flood, is equally obedient to the same great law. The engineer who has learned its meaning well has taken the first step toward a successful solution of the problem of the river's improvement. He who ignores or defies it puts himself in the pathway of forces as irresistible in their operation as the march of a glacier.

This brings us to the practical question. Here are so many cubic miles of water per annum to be conducted to the sea. It is desired to do it in such manner as to afford the best possible low-water navigation, and the least possible high-water inundation. Shall it be confined in its course to one channel, or shall it be subdivided or allowed to subdivide itself into several?

The excavation of a river-channel is work. The transportation of sediment is work. The accomplishment of either involves the expenditure of energy. So that it is but another statement of the same question to say: How will a given quantity of water perform most work — in one concentrated volume, or in subdivisions?

To this inquiry the experience of every person furnishes a ready and true answer. A gentle rain, falling on the earth's surface, leaves its lightest vegetable mold undisturbed. The same quantity of water, descending in a waterspout, tears away its solid hills. The water which trickles over a field through thousands of infinitesimal and broken channels, without producing the least abrasion of its surface, would, if concentrated in one volume on the same surface, plow it deep and wide. There is nothing else in nature of which it is so literally and familiarly true that "in union there is strength," as of

water. Subdivided finely enough, it is the morning mist; concentrated largely enough, it is nature's master mechanic, the continent-builder of the world.

Taking its whole life together, there is, in the phenomena of the Mississippi River, as elsewhere, a perfect correlation of forces. It does all the work it can all the time. It excavates its bed as deep and wide as it can. It carries out of its channel as much of the sediment mixed with its water as it can. When it drops from its broad shoulders a hundred thousand cubic yards of sand on one bar, as it often does, it is because it can carry it no farther. It never drops a spoonful except for the same reason.

All the conditions of the river are the result of its own forces. It has no antecedent banks, bars, width or depth; all these are its own creation. It made yesterday the things that make it to-day; it is making to-day the things that will make it to-morrow. Its present inadequacy to meet the wants of men is the result of its inadequate work in the past. It overflows its banks because its channel is not capacious enough to contain its flood. To make its channel more capacious requires more work. At low water it stumbles over bars which it lacks strength to displace. To remove them requires more work. It makes its shoal places shoaler by the deposit of sediment which it wants energy to carry farther. More work would do it. So that if the river of the future is to subserve the interests of mankind better than the river of the present, the river of to-day must be induced to do more and better work. This is to be accomplished by the conservation, concentration, and wise direction of all its energies. That this means the conservation, concentration, and wise direction of its *volume* seems too obvious to need repetition.

Depletion, or subdivision, is a step in exactly the wrong direction. It is a change toward weakness; not toward strength. An outlet may serve to lower a flood for the time being, but the result is a temporary advantage gained at enormous future cost. The diminution of volume produced by the outlet means diminution of energy. It means a smaller, weaker river from that point to the sea. And that means a river less able to remove bars, less able to excavate a channel, less able to carry sediment, less able to contain a flood.

It is in the nature of things that each portion of the river shall, in its turn, bear the burden of the complications above it. The bars that obstruct it came down from above. The sediment that loads its water came down from above. Hence, there is the clearest necessity that it should, as in the order of nature it does, augment its strength as it descends. An outlet reverses this order of nature and of reason. It diminishes the energy of the river below, without lightening, in any like degree, the burdens cast upon it by the river above.

It is not possible, without accurate and expensive observations and measurements, to trace all the injurious effects of an outlet upon the river below. But enough is visible to common observation to show the unvarying operation of the laws stated. At its mouth the Mississippi has tried the outlet system of its own accord, by subdividing into four distinct channels. From New Orleans down to the widening of the channel, preparatory to its subdivision, it has nowhere less than a hundred feet of depth. In its four subordinate channels the depth rarely exceeds fifty feet; and at the mouths of all, except the one improved by the jetties, it is about sixteen feet. Suppose the same subdivision had taken place two or three hundred miles higher up, would not like results have followed in the channels below?

Outlets in the form of great crevasses have frequently occurred. They are always followed by increased deposits in the bed below them.

Channels conveying unfiltered Mississippi water invariably contract their dimensions to the smallest space that will contain the water flowing through them. The law governing chutes has been stated already;—a swift current keeps them open; a sluggish current fills them up with sediment. When an island appears in the center of the river, it is rare that a good channel is maintained on each side of it. Something will occur to disturb the equilibrium between them: one will begin to rob the other of water: whereupon the other will begin to fill with sediment,—a process which increases in rapidity as the disproportion of flow grows greater.

At the mouth of the Red River is a remarkable illustration of the same law. The Red formerly entered the Mississippi at the apex of a bend. In 1831 the bend was cut off. For a time the Red used the upper arm of the bend as its channel, during which time it rapidly contracted to the dimensions suitable for the

conveyance of the water of the Red River alone; while the lower arm of the bend closed up entirely. Afterward the Red abandoned the upper arm of the bend, and cut a channel just large enough for its own flow through the lower one; whereupon the upper one filled up. Later, the enlargement of the lower Atchafalaya, whose head is in the apex of the old Mississippi bend, near the original mouth of the Red, produced an active outflow from the Mississippi, which has been already described, and, in consequence, the channel is now enlarging. So that, in the space of six miles, between the Mississippi and the head of the Atchafalaya, there have been, within fifty years past, first, a Mississippi channel 3,500 feet wide, and probably sixty feet deep; then a dry bar; then a Red River channel three hundred feet wide and ten feet deep; and now a rapidly growing outlet.

The use of the word "unfiltered" in the general statement above is material, and marks an important distinction. The statement is not true of a channel conveying clear water. The Yazoo River is one of this class. There was formerly, at Yazoo Pass, nearly opposite Helena, an outlet which diverted a large volume of water from the Mississippi into the Yazoo, which that river returned to the Mississippi at Vicksburg. By this means the channel of the Yazoo was excavated deep and wide. The pass was closed a number of years ago. Since then the chief water-supply of the Yazoo has come from the swamp-drains, which discharge clear water, and from Mississippi overflows, which are thoroughly filtered by the woods and swamps through which they travel before reaching it. So that we have to-day in the Yazoo a clear water stream, flowing with slow velocity through a capacious channel which does not perceptibly decrease in size. No such result ever occurs in the case of water charged with sediment.

Nature has made the channel of the Mississippi of increased capacity for discharge as it descends. The permanent diversion of a substantial portion of its water by outlets will reverse that order, and shrink the channel below them to the size required by the diminished river. This shrinkage will take place first by decrease of depth, as the depositing sediment falls to the bottom, and thus the interests of navigation will be the first to suffer. But the mischief will not stop there. When the river and the outlets shall have adjusted themselves to the new conditions created they will, all together, be less able to discharge a great flood than the unimpaired river was alone; and there

will be no place for it to find vent except over the shallow rim of the shrunken channel.

It is not within the purpose of this article to describe in detail the methods by which it is proposed to execute the general plan of improvement recommended by the Mississippi River Commission. Suffice it to say that the retention of the river's water in one undivided volume is the cardinal principle of the plan; and that it is proposed to seek this end by such means as will introduce the fewest artificial conditions into the river's life, and apply most economically and effectually its own forces to the work of improving its own channel. These consist chiefly in the closing of chutes and outlets; the contraction of the channel in places where it is excessively wide, by the creation of new banks from deposited sediment; and the revetment of banks where caving is exceptionally rapid and injurious.

ROBERT S. TAYLOR.

GLADSTONE.

On the thirteenth of December, 1882, the English press announced the re-organization of the ministry. That day was the anniversary of the Prime Minister's first election to Parliament fifty years before. The new ministry is of historic, and even picturesque, interest. Every party and every cause which had struggled for existence and success through the forms of the British constitution is, in its final evolution, incorporated in this, the strongest ministry known to English history. In it the old Whig lion grown tame, and the Radical lamb grown bold, lie down together. The crowning of his edifice will appear to Mr. Gladstone in the acceptance of a place in his cabinet by the Earl of Derby. He would not be so cruel as to wish that the late Earl should have lived to see his son and heir, consecrated to the Toryism he led like a Rupert, bringing the social and political traditions of Liverpool nobility to swell the triumph of a Liverpool merchant's son; but he might be pardoned a passing sigh that Lord Beaconsfield has not lived to see this hour. When, at the victorious close of the Egyptian conflict, the Prime Minister appeared at the Lord Mayor's banquet, M. John Lemoinne said in the "Débats": "Who could have ever foreseen that the man named Gladstone, the glorious hero of letters, science, philosophy, and theology, the standard-bearer of peace, light, and civilization, would enter the city of London crowned with laurels, in a car of victory, and followed, like the Roman consuls, by slaves and captives from Africa and Asia." But Gladstone, entering the House of Commons at the head of his new ministry, is attended by more surprising symbols than these. The Stanley in his train is a sign that the ancient war between Whig and Tory is past, like the War of the Roses, however noisily their ghosts may fight on over their sepulchres. The great Quaker commoner sitting apart, and the

glitter of military decorations, mean that jingoism is transferring its acclamations from the party that purchased the Suez Canal to that which occupied Egypt by force of arms; while, on the other hand, the dusky captives of the train, attesting that "British interests" and "British honor" are safe under the rule of the middle-class Premier, appear so happy and comfortable,—Cetewayo on his throne, and Arabi posturing as "the Blest" amid palms waving in the spicy breezes of Ceylon,—that the Peace Society, and the Aborigines Protection Society, and even the Egyptian Committee, are also visible with their broad-brimmed hats and white neck-ties, touching elbows with warriors in this amazing triumphal procession.

These symbols and signs of greatness a little while ago surrounded Lord Beaconsfield; but they merely made him a tableau-figure, as if at the end of one of his own gorgeous romances. His career was a brilliant romance, but it had to end in an anti-climax. But Gladstone is contemporary history. Fifteen years ago, when Robert Lowe pointed to him and said that the hour and the man had arrived, Disraeli exclaimed, "I believe the clock goes wrong and the man is mistaken." But Lord Beaconsfield lived to discover that it was Disraeli who was then mistaken. In the jubilee year of his parliamentary career, Mr. Gladstone must be regarded as, in some sense, the political incarnation of the English people. That the realities he represents should now invest themselves with the symbols and shows of power, is mainly interesting as an indication of the extent to which he holds the heart and mind of the nation in his hand. These splendors and emblems are offered at the feet of the man who personally cares least about them. As the oriental world invested Buddha with the legends and glories of their deities, whose existence he had denied, so is this plain prosaic Englishman worshiped with relics of the idols he has shattered. In saying "worshiped," we may weigh the word and will retain it. Not long ago the writer of this happened to be conversing with a Liberal member of Parliament, and criticised some part of Gladstone's Irish policy. The honorable member looked cautiously around to be sure that others were not listening, then drew his chair closer, and in a lowered tone said, "Between you and me, Gladstone is carrying us to the"—but, no matter where it was, the precautions taken to secure the confidential character of the opinion proved the vanity of it. During the two sessions

of 1882 it was as much as many a member's parliamentary life was worth to vote against any measure introduced by the Government. The worship of the country for Mr. Gladstone could not be gathered from London. The metropolis has many virtues, but "republican simplicity" is not salient among them; in fact, it must be admitted that a large amount of snobbery surrounds the great center of wealth and titled magnificence, and it has never been satisfied with the leaden casket in which the mace has been concealed during the Gladstone *régime*. A queen in chronic mourning was somber enough without the counterpart of a premier without wealth or state, whose chief delight seemed to be cutting trees on his farm in the intervals of laying low lords at Westminster. Through a curious combination of circumstances, the liberal *salon* has been a conspicuous desideratum in recent years, the relations of the ministry to "society" being chiefly represented by two American ladies, whose husbands belong to the cabinet. The contrast between Mr. Gladstone's private residence and that of an average alderman, between the Lord Mayor in his coach and the Premier in his cab, is striking, and London prefers the gold and silver caskets. Nevertheless, even London has shown signs of surrender since the military parades began. As for the rest of the country, to return to that, its enthusiasm for this man is extraordinary. During the sessions of 1882, the tables of Liberal members groaned under the piles of letters entreating, persuading, or still oftener commanding them to stick by Gladstone through thick and thin, and vote with him whatever he might do. When the expedition to Egypt was resolved on, nothing could be more opposed to the non-interventionist and peaceful policy which Gladstone had so zealously fostered; but the Liberal and Nonconformist press of the country, with few exceptions, naïvely declared that, odious as such a scheme would have been under another prime minister, they must conclude that Gladstone would not undertake it unless it was right, and must trust him though he slay them. Even when Alexandria was bombarded, under pretext of protecting a canal not threatened, a hundred miles away, and John Bright left the ministry, the veteran orator formed no cave of Adullam. The country attributed his retirement to Quaker peculiarities, and Gladstone's shadow remained potent enough to keep silent that voice which never before failed in eloquent denunciation of a war he deemed unjust.

There have even been some indications that Gladstone-worship exists in the United States. Several American papers have caught the English enthusiasm, and one Boston paper mentions the loss of a subscriber by having admitted into its columns a criticism on Gladstone. Finally, if anything were needed further to show the intensity of this feeling, it might be found in the corresponding intensity of hatred felt for him by Conservative partisans. The "Saturday Review" recently used the heading, "A New Age of Faith," for an article on the implicit faith of Liberals in Mr. Gladstone, and the religious phrases used above on the same subject cannot be thought extravagant or merely metaphorical by any one who has lived in the political atmosphere of England during the last two years. Indeed, this ardor of enthusiasm bears indications rather of faith in Mr. Gladstone than of personal liking for him. It is even doubtful if he could yet be accurately called a popular man,—he is certainly not loved by his chief supporters in Parliament,—while his political strength in the country is unprecedented.

The reasons for this enthusiasm for a man who, less than eight years ago, had so lost his hold on the country and his party that he resigned his office and leadership, are not remote. Mr. Gladstone was returned to power on a wave of moral and religious feeling. The menaces of the Beaconsfield government toward Russia were largely theatrical, but they became dangerous, and their effect was made to recoil on the threateners by Gladstone. The Premier's "want of humor" is proverbial in Conservative circles, and they had good cause to deplore it when he was going through the country with the vehemence and burden of a prophet. While the old Russophobia to which Lord Beaconsfield appealed was found to be antiquated, the cynical disregard of alleged "Turkish atrocities" by Tory speakers shocked the moral sense of the nation. There was also a good deal of religious feeling awakened by tidings of the massacre of Christians by Mohammedans, and for once Lord Beaconsfield's Jewish soul betrayed his Christian tact. Although Mr. Gladstone did not directly appeal to religious animosities, they who listened to his impassioned arraignment of Turks and Tories were never suffered to forget that Bulgarians and Russians were their fellow-Christians. To the moral and religious sentiments thus excited was added the strength of the commercial interest, the first article in whose creed is "peace at any price." Yet, when Mr. Gladstone

again took his place as Prime Minister, in 1880, he was, with all this support, by no means the idolized leader of the nation that he is to-day. This is due to the internal crisis of the nation with which he has had to deal, to the fact that he was the one possible pilot of the tempest-tossed ship, and that he sleeplessly watched and worked at his perilous post, night and day, through the long storm.

The latest Irish revolution has been peculiar in several respects, but of these one was especially alarming, namely, the degree to which parliamentary government in England was involved. The argument for a parliament in Dublin was so strongly enforced by the violence of its probable elements when imported to London, that for a time the business of the House was interrupted, and the legislative arm seemed threatened with paralysis. This grave danger, accompanied by murderous deeds in Ireland and menaces in London, gradually assumed such dimensions that the English people recognized that they were amid a revolution of the deep and deadly kind. As is inevitable under such circumstances, there was something like a panic in the country, and criticism of Mr. Gladstone had an appearance of disloyalty. They who complained that his measures for the pacification of Ireland embodied principles inimical to the rights of property, or that his rules for "closure" in parliamentary debate threatened freedom of discussion, appeared to the people generally like the passenger on an endangered ship who should annoy the captain with his apprehensions for the fate of a spar or a wine-cask. The criticisms were based upon undeniable facts, and consequently could only be answered by outbursts of loyalty on the part of the patriotic multitude. As amid these cheers the septuagenarian statesman was seen toiling like a Hercules, bent but unbroken beneath his burden like an Atlas, framing measures which involved complete mastery of financial and legal questions, and of all details in administration; as, night after night, he stood calm amid the uproar, patient under complaints and sneers, and forcing down opposition by a knowledge of the facts which none could equal, stated with an eloquence that none could surpass, the cheers for Gladstone made way for more reverent tones. His seventy-second birthday (December 29th) found him on that eminence which military heroes have sometimes reached, but rarely statesmen, where men are regarded as the saviours of their country. Whether the

country is really saved or not is another question; that Mr. Gladstone is doing all he can to save it, and that he will save it in the end, and bring lasting peace and prosperity to Ireland, is the faith of the large majority of the English people. If the dreary and tragical history of the Irish trouble ever becomes a memory of the past, it will not seem wonderful that the country should to-day regard it with somewhat the same heaviness of painful foreboding, verging upon despair, that patriotic Americans felt regarding slavery, and that they should see in Gladstone, as Unionists saw in Lincoln, the fiery pillar of a great hope leading across a weary wilderness to a land of repose and prosperity. One thing is certain: that Mr. Gladstone has wearied out opposition to his Irish policy. Whatever virtue may or may not be in it, it will be fully and fairly tried. The speech made at Manchester, on the evening of the "Gladstone Jubilee," by Lord Derby, in which he formally gave in his adhesion to the Liberal party, indicates the determination of the landed interest in England, so far as it is not partisan, to accept the risks and sacrifices necessary to insure a fair trial of the land act.

The special circumstances just mentioned sufficiently explain the accession of enthusiastic support to Mr. Gladstone in the last two years; but that he should be the one man in England to whom anybody would dream of confiding the country in such a crisis, is a more important and interesting subject for political study. "The way of fortune," says Bacon, "is like the milky way in the sky, which is a meeting or knot of a number of small stars, not seen asunder, but giving light together; so are there a number of little and scarce discerned virtues, or rather faculties and customs, that make men fortunate." It is common to hear Englishmen say, "Gladstone is the luckiest man that ever lived." But there is no luck about it. The "virtues, faculties, and customs" of the English people have flowered in the success of this most English of living men. Their favorite faults are in him. That love of large principles, and dislike of pressing them to logical conclusions; that suspicion of applying large inductions to practical politics, which led John Stuart Mill to the belief that it would be almost fatal to a cause in England to prove itself entirely reasonable and just, find many illustrations in the career of Mr. Gladstone. The complex character of the British Constitution, the unique mixture of ideals and survivals in its institutions, have deter-

mined the evolution of this statesman, who pauses while writing High Church tracts to abolish the Irish Church, who denounces Strauss and makes a pilgrimage to Darwin, who uses the royal prerogative to popularize the army, and whose democracy is dressed in a chasuble. Men of equal culture and ability with Mr. Gladstone there are in England, but they are apt to perceive the anomalies of their country; they have misgivings, they take sides; they tolerate the other side, but critically, and if they defend its practical rights, it is without heart. But none of these misgivings divide the strength of Mr. Gladstone. His proverbial lack of humor is the other side of his unconscious ingenuity in harmonizing inconsistencies, which has become an instinct. Plato says all clear ideas are true. Mr. Gladstone's wonderful facility of clear statement enables him to make a contradiction seem simplicity itself, and in his sentence every detail appears a generalization. One of his colleagues is reported as saying: "I hate Gladstone, because he is always so confoundedly in the right." There never was another minister who so overshadowed his colleagues, and there is reason to fear that he has been the unconscious means of arresting the development of some of them into statesmen, by his way of setting forth all his projects, large and small, as pillars of Hercules, and on moral heights where he alone can guard and defend them. Even his financial statements in the House have sometimes been made so solemnly that it appeared a kind of atheism to criticise them. However unpleasant all this may be to aspiring or rival politicians around him, it makes an irresistible power in the country. In an age of skepticism, here is a man that never doubts; in an age of vacillation, here is one that does not vacillate. Whatever is in him is organic, becomes moral, rises to religious elevation, and the people are surprised and delighted at hearing it authentically proved that what they desired, but doubted, is the superlative principle of reason and right.

Mr. Gladstone's confirmed habit of being always "so confoundedly in the right" has survived all the events which have shown him to have been sometimes in the wrong. His maiden speech in Parliament was a defense of Jamaica planters, of whom his father was one, and in opposition to immediate emancipation of the slaves; and nearly thirty years later, being Chancellor of the Exchequer, he declared that Jefferson Davis had made the Southern States an independent nation. Slavery

has been abolished by England and America without the aid of this most historical of statesmen. He began his career as a Tory,—his first encounter with Disraeli being when the latter was on his way from the Liberal camp to take the vacated place,—and he resigned his place in the Peel Ministry (1845) because of a bill introduced by the Government to endow a Roman Catholic college in Ireland, which bill he immediately supported. He arraigned the Government of Naples before the world; he invited Garibaldi to be the guest of England, then showed him the door when he found that the honors paid to his guest displeased his old friend Napoleon III., with whom he had acted as a special constable in London at the time of the Chartist demonstrations. In these last years he made the ears of England and Scotland tingle with his eloquent invective against the wrongs inflicted by Moslems on Bulgarian Christians, but all the sufferings of Jews in Russia could not extort a protest from him. A review of the anomalies of Mr. Gladstone's career would make this paper too long. The last of them is his course with regard to the junior member for Northampton, so long excluded from his seat in the House, after repeated elections, because of his opinions on religious subjects. Mr. Bradlaugh, misled by Mr. Gladstone's law-officers among others, believed he had the right to choose between taking the oath or making an affirmation on taking his seat, and chose the latter. The courts decided that the parliamentary oath was not included in the act allowing affirmation in law-courts, and Mr. Bradlaugh then offered to take the usual oath. Mr. Gladstone defended his right to do this, when it was challenged; but the House voted that Mr. Bradlaugh should not be allowed to take the oath because of his atheism. That having been decided, a large number of Liberal members rose in their places and suggested to the Prime Minister that he should bring in a short measure which would allow affirmation. But Mr. Gladstone sat still on the treasury bench, shaking his head; and although the Liberal press next day expressed its wonder at this, and earnestly appealed to him to adopt this the only possible means of doing justice to the constituency of Northampton, he took no notice of the matter. Thus, the wrong was continued entirely by the inaction of the one man who could redress it, and who had previously declared it to be a wrong. It is not to be supposed that a minister who had helped to strike out of the oath the words "on the true

faith of a Christian," in order that Jews might be admitted to Parliament, had any technical objection to the method by which alone the House had decided that an atheist could be admitted.

In all these changes and apparent inconsistencies a notable thing has been the absence of any effort to explain them. Mr. Gladstone sitting on the treasury bench, and shaking his head without opening his lips, amid the clamors of his friends for a certain act, is typical in its way. It belongs to that species of inconsistency which is a jewel of the English soul. Whatever general principles may be laid down about religious liberty and the right of private judgment, there are unwritten reservations in them. If the statesman who once declared that the King of Naples had raised atheism into a system of government had been the means of introducing an atheist into the legislature, the non-conformist and the evangelical pulpits of the land would have fulminated to such an extent that his tenure of office would have been endangered at a critical moment. His relations with the Queen—who still hesitates to transfer the Garter of her deceased favorite, Lord Beaconsfield, to the only man who has any right to it—could hardly have been rendered more pleasant by a move which would have befriended the radical who has sharply attacked the House of Brunswick. Mr. Gladstone is much stronger now than he was then, but when he gave out his *non possumus,* with that silent shake of the head, he represented the exact sentiment of the country, which was neither willing to limit religious liberty nor to admit Mr. Bradlaugh.

Dick Whittington is a municipal ideal, but not national. Prime ministers do not rise from the proletariat. Gladstone's father was a merchant, but he was also a baronet, and his fourth son, whom the English call "the grand old man," is by no means indifferent to the aristocratic side of his country. Personally, indeed, he has not sought title; in fact, he might easily have been a peer long ago had he been willing to give up his leadership in the Commons for it. But a title still represents a bit of the history and constitution of England to him, and he has repeatedly shown deference to it. On one occasion, when a late duke petitioned for a divorce, Gladstone was summoned as a witness, and, in reply to a question as to whether he was an intimate friend of the duke, replied, "As intimate as the difference in our positions permits." A smile went round the court-

room, the Prime Minister being far above the duke in every respect, and the reply was deemed rather snobbish. Perhaps it may have been so in a sense, but it meant mainly a bow to British institutions. Another such bow was lately seen in the Sunday labor which church-goers saw bestowed on the decorations prepared for the reception of the Queen next day at the new law courts, and which workingmen contrasted with the bars maintained by the Government at the doors of the British Museum and National Gallery on the same day. The commandments must accommodate themselves to British royalty, not because it is royal, but because it is British. The people do not believe in equality, and therefore their "grand old man" does not. They do believe in democracy, and so therefore does he. Mr. Gladstone is never found espousing the cause of a minority. A principle is invisible to him until it has the support of the country; then he will discover one, even where it is invisible to all other eyes.

Thus, after fifty storm-and-stress years of parliamentary life, Gladstone remains an Englishman. As the "Pinafore" chorus says:

> "Despite of all temptations
> To belong to other nations,
> He remains an Englishman."

In this case the other nations would be the new England represented by the Dissenters, the Rome of Ritualists, Norman caste, European culture, and continental skepticism. With most of these Mr. Gladstone has coquetted, or formed friendly relations, but he has never given himself to them. On the contrary, he has far more brought them over to the Right Centre, of which he is the embodiment. It could only have been a personal force that had the weight of this little English planet pulling with it, which was able to put John Bright into court dress, and even for a time into war-paint. Sir Charles Dilke, and Fawcett, coming under the same attraction, forget the radical wild oats they used to sow, and Chamberlain brings Americanized Birmingham, with its caucus, to be made into the bulwark of a new sacerdotal liberalism. Ritualism is rather irreconcilable toward the man who once accompanied its devotees to the very door of Romanism, but Dissent receives his patronage with ecstasies. By disestablishing the Irish Church, though bishops cried "sacrilege!" Mr. Gladstone sanctioned the principle that a state church

is the creature of a majority; the dissenters have only to roll up a majority against the English Church, and that would have to go too. They will never be able to do it. When the Church of England is disestablished it will not be in favor of non-conformism, but more probably in favor of something which it hates more than the Church. However, the reduction of the Church in Ireland to the condition of a sect, and the secularization of its endowments, were in harmony with the non-comformist programme in the rest of the kingdom, and it strengthened Mr. Gladstone's hold on the dissenting sentiment. Yet it must be remembered that, whatever objections the sects may have to lords spiritual, they generally have as decided a weakness for lords temporal as other Englishmen have. The ideal of the country is not in the direction of abolishing the peers, but of seeing them all falling into file under the headship of a liberal and non-titled commoner. This ideal is fairly fulfilled in the jubilee ministry just announced, in which Gladstone is seen with twenty titled servants in his political livery; while, on the other hand, the aristocratic bosom swells with pride at observing that, out of the fourteen seats in the new cabinet, ten are filled by members of their order. It must be confessed, however, that Mr. Gladstone has not always held his head erect above these decorated shoulders of his government. The appointment of Lord Frederick Cavendish to be Lord Lieutenant of Ireland seems hardly explicable by any other theory than that of his overweening esteem for the one nobleman of his family connection.

Whether any personal feeling mingled with the Prime Minister's practical reply to the murders in Phœnix Park, Dublin, or whether under the blow he merely relapsed for a time into a rough plane of English pluck, in either case a great opportunity was lost. Ninety-nine hundredths of the disaffected Irish people, recoiling from that horror, held out a pleading hand to England, and the Government struck it with a gesture of vulgar resentment. Even Lady Cavendish had shared the hope that had risen in many minds that the blood of this young nobleman, who had gone to Ireland as a messenger of conciliation, might secure an atonement, which would be the best consolation for a great bereavement. But the moral sense of Ireland had been aroused only to be humiliated, and the obvious aim of the assassins, to prevent reconciliation, was rendered successful by the angry answer of the Government. An impressive cartoon appeared

in Dublin, representing Mr. Gladstone handcuffing Ireland at the moment when a masked figure is stabbing her in the back

This kind of resentment, however, is by no means characteristic of Mr. Gladstone. On the contrary, he has often shown himself—as in the withdrawal from the conflict with the Boers, and the restoration of Cetewayo—able to do what he considered right in the face of taunts about "yielding to pressure," "want of courage," and the like. There were sneers enough of that kind when he released the Irish "suspects" from prison. That he is capable of statesmanship of a very high order has been shown once more in the case of Arabi. A very severe pressure was brought to bear upon Mr. Gladstone to induce him to make that enthusiast, the most scholarly of Egyptians, a scapegoat for all offenses in the land of bond-holders. This pressure was labeled with the name of "British honor," but beneath it was the French desire that England should alienate Egyptian popular sentiment, and the Tory desire that the Premier should alienate the moral sentiment of his own countrymen. The pardon of Arabi—for his residence in Ceylon amounts to that—was a bitter disappointment to his enemies, and greatly strengthened his position. It prepared the way for the general adoption of Lord Derby's naïve moral justification of the invasion of Egypt,—namely, that the Government didn't mean it, but was compelled to change a threat into an act by the rash boldness of the Egyptians when France withdrew from the demonstration. The possession of Arabi is now an English mortgage on Egyptian good-will. Arabi is indebted to English advocacy and English money for his life, and no one will be surprised if, in the future, he shall visit London, and return to Egypt as the most useful ally of the nation which conquered him.

The University of Athens has just voted a considerable sum for a statue to Mr. Gladstone. That will be the first visible memorial to an Englishman in the classic land. It will be set up in homage to his writings about Homer, and his restoration of Greek nationality. If a critical German or English specialist in Greek scholarship were asked who knows least about Homer, he would probably reply, "Gladstone." If an ethnologist, or a continental politician, were asked who knows least about the Greeks of to-day, he would probably make a similar reply. The ancient and contemporary Greece of Mr. Gladstone is strictly conventional, his Homeric ideas antiquated, his enthu-

siasm for Hellenism Byronic. But this conventionalism he has made a political fact, and a factor of European state-craft; so that Greece properly raises a statue to its modern creator. The incident is significant of Mr. Gladstone's relations to the Greece and Rome, and the Palestine also, which exist at his own doors. He does not know what it is to doubt. Lord Beaconsfield, born on St. Thomas's Day, stood between Judaism and Christianity, between the past and the future, as if all the solstitial spirits had hovered over that day of his nativity, the shortest day of the year, which it terminated in the pre-Christian calendar. He said, "The impossible always comes to pass." But Mr. Gladstone has never looked beyond what has come to pass, and never halts before a speculative future. His powers are concentrated upon the surfaces before him. Others may look beneath the facts; he will make the most of them just as they appear. Etymologically, his name is from the Scottish "glead-stane," meaning "hawk stone," and it has a quaint coincidence with his beak-like nose, his far-reaching eye, and a sort of predatory expression in his general look; but the hawk might be still more fitly his totem as an orator. He hovers for a little, softly poises, then swoops down on his point, or upon his antagonist, and makes the feathers fly. This force, as of a winged thunderbolt, is very admirable when one sees it pouncing upon somebody else's opinions with which one happens to have little or no sympathy; but it becomes formidable when it is found hovering near one's own brood. Outside of politics, Mr. Gladstone takes the same conventional view that he does of Homer and Greece, but with the same formidable power to make it out the right view against all competitors. Whether it be religion, church, literature, philosophy, or smaller things like Trojan reliques and clerical vestments,—for he aspires to play many parts,—he brings to the treatment of each question an unquestioning method, a moral earnestness, and a solemn ingenuity, which carry a weight of authority equally to things about which he does know and things about which he does not know. To the artist, the philosopher, the scientist, to every progressive investigator in non-political subjects, Mr. Gladstone is a chief of the Philistines. An advocate without wig, a clergyman without gown, and with a character that still more disarms suspicion, this most unconscious of casuists has consecrated more commonplaces with

the rhetoric of liberalism than any Englishman living. Emerson, speaking of eloquence, said there is an acceptable statement possible for every man of that proposition he is most unwilling to believe; but here is an eloquence which can invest with the dignity of high philosophy that which every man is most anxious to believe.

Whatever influence this superficial universality of Mr. Gladstone may exert on the higher culture of his country, there can be no doubt that it is characteristic of his profound organic relation to the people he represents. He is the President of England, and nothing English is foreign to him. He is not a factitious president,—no king in frock-coat whose greatness is put on at one election and taken off at another. He is a president, not by popular election, but by long national evolution; his only halo is the luster of his services; his authority is the precise weight of his character and ability. I had nearly written genius, and, taking Carlyle's definition of genius as an infinite capacity for taking pains, one can hardly deny it to Mr. Gladstone. Although it must be denied him, and it must be admitted that his capacity is for work rather than taking pains, he is all the more the phenomenal political figure of Europe. What the natural development of constitutional monarchy must inevitably be was foreshadowed by the Laureate when he spoke of England as the "crowned republic"; but it has come very near realization under the administration of a prime minister who has given jewels to the crown that shine through its somber veil like stars. A war with Russia averted, a serious difficulty with the United States settled by arbitration, the Irish Church abolished, the equal rights of married women entirely secured, the ballot, the laws revised and the courts reorganized in a grand edifice removed from the shadows of Westminster, and an admirable system of national education,—these are eminently the achievements of an English president who, for over fifty years, had no dignity to which his ambition could aspire higher than the services he could render his country.

MONCURE D. CONWAY.

RAILWAY INFLUENCE IN THE LAND OFFICE.

In the early days of the anti-slavery struggle, Harriet Martineau predicted its speedy triumph, and that "other sorts of freedom besides emancipation from slavery would come with it." She believed "that with every black slave a white would also be freed," and that "the aristocratic spirit, in all its manifestations, would be purged out of the community." These inspiring prophecies have not been fulfilled. Slavery, indeed, has been abolished, at least so far as legislation could take away the power of the master; but the freedmen have not yet been emancipated from the thralldom imposed by property and intelligence upon the helplessness of poverty and ignorance. The spirit of aristocracy has not been "purged out of the community" in either section of the Union, but has simply taken refuge in other forms, and is still putting forth the full measure of its evil power. While the chattel slavery of the Southern negro is at an end, the animating principle of the old slave-masters still finds manifold expression. It reveals itself in industrial servitude, which borrows its life from the alliance of concentrated capital with labor-saving machinery. Its maxim is, that the chief end of government is the protection of property, which is easily translated into the kindred maxim, that capital should own labor. Its tap-root is pure cupidity, and, if left to itself, it degenerates into a system of organized rapacity, with conscience and humanity turned adrift. Commercial feudalism is another form of aristocratic rule. It wields its power through the machinery of great corporations, which are practically endowed with life-offices and the right of hereditary succession. They control the makers and expounders of our laws, and are steadily advancing along their chosen line of march toward absolute supremacy. The system of agricultural serfdom, which we call land monopoly, is not less hostile to the life of free insti-

tutions. It has recently added to its triumphs in the purchase by foreign monopolists of millions of acres of land, which should long since have been devoted by law to actual settlement and tillage; while its power is constantly on the increase through the multiplication of great estates. When we add to these fearful forms of slavery the startling debasement of our politics through the corrupt use of money, which thus foreshadows the political serfdom of the people, we cannot fail to see that the realization of Miss Martineau's dream of a democratic millennium must be postponed to some indefinite time in the distant future, and that it can only become possible by the ceaseless vigilance of the people.

These general observations will serve as an introduction to the special subject of this paper, namely, The power of our great railway corporations over the government which created them and prodigally endowed them with its lands. The policy of stimulating the construction of railways by grants of the public domain had its beginning in 1850, in the grant then made in aid of the Illinois Central Railway. The act gave "every alternate section of land designated by even numbers, for six sections in width on each side of said road and branches"; and it provides that, "in case it shall appear that the United States have, when the line of said road and branches is definitely fixed by the authority aforesaid, sold any part of any section hereby granted, or that the right of preëmption has attached to the same, then it shall be lawful for any agent or agents appointed by the governor of said State, to select, subject to the approval aforesaid, from the lands of the United States most contiguous to the tier of sections above specified, so much land, in alternate sections or parts of sections, as shall be equal to such lands as the United States have sold, or to which the right of preëmption has attached as aforesaid. . . . . Provided, that the lands to be so located shall in no case be further than fifteen miles from the line of the road." It was the theory of this policy that in a belt of lands thus restricted in width the reserved sections would be duplicated in value by their proximity to the road, and that, while it could work no hardship to the settler to pay a double minimum for lands thus doubled in value, the Government would lose nothing, and the fund thus raised would enable the road to be built. This act became a precedent for all subsequent land-grants for the following twelve years; and had it been

adhered to, with adequate guards against monopoly, it would have been perfectly defensible, and generally most beneficial to the public. But, in the year 1862, a radically different policy was inaugurated. Simultaneously with the passage of the Homestead Act, and, as if purposely intended to nullify its provisions, our land-grant policy put on new shapes, and entered upon its historic career of recklessness and extravagance. The grant made in aid of the Union Pacific Railroad, of July 1st, 1862, as subsequently amended, gave ten sections per mile on each side of the road, within the limit of twenty miles. The grant to the Northern Pacific Railway was of every alternate section of public land, not mineral, to the amount of twenty sections per mile on each side of its line, with the privilege of making up deficiencies within ten miles on either side of the land granted, or fifty miles from the line of the road. The grant to the California and Oregon Railroad, of July 25th, 1866, was twenty alternate sections per mile on each side of the line, with the right to make up deficiencies within ten miles of the land granted; and the same quantity was granted to the Atlantic and Pacific, by Act of July 27th, 1866; and to the Southern Pacific, by Act of the same date. The grant to the Oregon Central Railroad, of May 4th, 1870, is ten sections per mile on each side of its line, with the right to make up deficiencies within twenty-five miles. The grant to the Texas Pacific Railroad, of March 3d, 1871, is twenty alternate sections per mile on each side of the road, with the right to make up deficiencies ten miles beyond these limits; while no limits are prescribed as to a portion of the route, and the company is allowed to make up deficiencies in the State of California within twenty miles of the lands granted. In some of the rapidly multiplying grants made between 1864 and 1870, the reserved even-numbered sections were granted after the odd ones had been exhausted; while, in one instance, the grant, as construed by the Land Department, had no lateral limits, and thus was a palpable perversion of the letter and spirit of the original policy. The people at last became so thoroughly aroused, that Congress, over eleven years ago, was obliged to call a halt; but it was not till more than two hundred million acres of the people's patrimony had been appropriated—an area as large as that of the thirteen original States.

I have not referred to these facts for the purpose of dwelling upon the enormous and irreparable mischiefs of this system, but

in order to clear the way for some pertinent and practical considerations suggested by this series of legislative acts. My task is threefold. I wish to invite attention to the power of these railroad corporations over the land department of the Government, in securing the illegal apportionment of large areas of the public domain; their power over Congress, through which they have maintained the prolonged monopoly of great areas of lands after their forfeitfure for non-compliance with the express conditions on which they were granted; and their power over the Federal courts, as seen in recent adjudications involving their rights. I shall deal with these topics in their order.

The administration of land-grants is committed to the General Land Office, under the supervision of the Secretary of the Interior; and the manner in which the work has been performed for nearly the third of a century, under every administration of the Government, shows how easy it has been for the companies controlling these grants to appropriate to their own use, under the forms of law, but contrary to its letter and spirit, immense tracts of the public domain. As an illustration of what I mean, let me refer to the language already recited from the Act of 1850, making a grant to the State of Illinois, which is substantially the same as in all later acts. It grants "every alternate section of land designated by even numbers, for six sections in width on each side of said road and branches"; with the proviso that, "in case it shall appear that the United States have, when the line of said road and branches is definitely fixed by the authority aforesaid, sold any part of any section hereby granted, or that the right of preëmption has attached to the same, then it shall be lawful for any agent or agents, to be appointed by the governor of said State, to select, subject to the approval aforesaid, from the lands of the United States most contiguous to the tier of sections above specified, so much land, in alternate sections or parts of sections, as shall be equal to such land as the United States have sold, or to which the right of preëmption has attached as aforesaid." It will be seen by this language that indemnity is only awarded where the United States, at the date of the definite location of the road, "have sold any part of any section hereby granted, or that the right of preëmption has attached to the same." In those cases other lands are given in lieu of such of the granted lands as the United States have otherwise disposed of prior to such location, and subsequent to the passage of the act.

Lands disposed of before the grant was made most certainly were not granted by it, and could not, therefore, be the subject of indemnity; but the Land Department, from the beginning, has administered every railroad grant upon the theory that the company was entitled to indemnity, as well for lands disposed of *prior* to the date of the grant, as for those disposed of between that date and the definite location of the line of the road. This construction of the law is an absurdity, and can only be accounted for by the presence and influence of the railroad companies, and the absence of any party claiming an adverse right. Their view of the law has been accepted without question; and yet, in the case of Wilcox *vs.* Jackson, 13 Peters, 498, the Supreme Court of the United States had declared, ten years before the Illinois grant was made, that, "whenever a tract of land has been once legally appropriated to any purpose, it becomes, from that moment, severed from the mass of public lands, and no subsequent law, proclamation, or sale, will be construed to embrace or operate upon it, although no reservation be made of it." But this decision was unheeded, and every administration of the Government—whether Democratic, Whig, or Republican—continued to administer every railroad grant as if it had embraced lands disposed of prior to its date, and as if indemnity were due on account of such lands.

But the claim of the railroad companies, so long acquiesced in by the Land Department, was at last settled adversely by the Supreme Court of the United States, at its October term, 1875, in the case of the Leavenworth, Lawrence and Galveston Railroad Company *vs.* the United States, 2 Otto, 733, in which the very principle in controversy was directly involved. The question presented was whether the Osage ceded lands of Kansas, which fell within the grant made by Congress to said railroad company, were included in the grant, or were reserved from its operation by the treaty which had set them apart for the Indians. Justice Davis, in pronouncing the opinion of the Court, says:

"Only the public lands owned absolutely by the United States are subject to survey and division into sections, and to these lands this grant is applicable. It embraces such as could be sold and enjoyed, and not those which Indians, pursuant to treaty stipulations, were left free to occupy. Since the land system was inaugurated, it has been the policy of the Government to sell the public lands, at a small cost, to individuals; and, for the last twenty-

five years, to grant them to States, in large tracts, to aid in various works of internal improvement. But these grants have always been recognized as attaching only to so much of the public domain as was subject to sale or other disposal, although the roads of many subsidized companies passed through Indian reservations. And such grants could be treated in no other way; for Congress cannot be supposed to have thereby intended to include land previously appropriated to another purpose, unless there be an express declaration to that effect."

In this opinion Judge Davis expressly adopts and re-affirms the language of the Court in the case of Wilcox *vs.* Jackson, already cited, as a rule of construction. In speaking of these Indian lands, he says: "They were not in a condition to be granted, and for this reason were excepted from the category of lands to be donated to a State to aid it in building railroads. And it would be strange, indeed, in a land-grant act, if Congress meant to give away property which a just and wise policy had devoted to other uses." In interpreting the words of the indemnity clause of the Act of Congress in this case, he says they "show clearly that the only purpose of that clause is to give lands outside of the ten-mile limits for those lost inside by the action of the Government in keeping the land offices open between the date of the granting act and the location of the road. This construction gives effect to every part of the act, and makes each part consistent with the other."

In the case of Newhall *vs.* Sanger, decided at the same term of the Court, 2 Otto, 761, the same principle was explicitly affirmed. This case involved the title to a quarter-section of land in California, which was claimed under a grant made by Congress to the Western Pacific Railroad Company, and contested by the claimant of the same tract as a part of a Mexican grant, which had been reserved from the operation of the Act of Congress. Justice Davis, in re-affirming the decision of the Court in the previous case, says: "The acts which govern this case are more explicit, and leave less room for construction. The words Public Lands are habitually used in our legislation to describe such as are subject to sale or other disposal under general laws. That they were so employed in this instance is evident from the fact that to them alone could, on the location of the road, the order withdrawing lands from preëmption, private entry, and sale, apply." These decisions fairly ended all controversy; for if lands covered by Spanish grants and Indian reser-

vations cannot be granted by Congress, and so cannot become the basis of indemnification, it is equally obvious, independent of the express language of Justice Davis, above quoted, that lands already disposed of by the Government, by sale or pre-ëmption, cannot be.

But, although it is now more than seven years since these decisions were rendered, the railroads have not lost an acre of land which has been illegally awarded them as indemnity, with the single exception of the Osage Indian lands involved in the case cited, and the tract in dispute in the case of Newhall *vs.* Sanger. In his report for 1876, the Commissioner of the General Land Office stated that suits were to be instituted to vacate the patents illegally issued to railroad companies, and that lists of the lands covered by them were in course of preparation. In his report for 1877, he says that little progress had been made in their preparation, but that data for use in the suits to be instituted were being prepared. In his report for 1878, he referred to the necessity for re-adjusting railroad grants under the decisions of the Supreme Court, and said the work had been delayed by the smallness of his clerical force. In his report for 1879, he stated that suit had been instituted against the Western Pacific Railroad Company by the direction of the Attorney-General, and that lists of the lands erroneously patented, prior to the ruling of the Supreme Court in the case of Newhall *vs.* Sanger, were being prepared as the basis of suits to vacate such patents. But as all these patents were void, they could convey no title, and had no legal effect whatever. There was nothing on which a court could act. It could only decide that the junior patent conveyed the title, the earlier patent being void. It could declare that if the lands covered by any of those patents were, at the date of the withdrawal of lands for the railroad, of the same status as the land claimed by Sanger at the date of its withdrawal for the Western Pacific Railroad Company, they were void for the reason stated by the Court in his case; but this was a question coming exclusively within the jurisdiction of the department having control of it. It is not necessary that every case should be passed upon by the Court, for, when a principle is fully established in one case, the department must follow it until modified or set aside. To send every patent into court would, doubtless, have suited the railroad companies; but what was wanted was the restoration to settlement of all the lands erroneously pat-

ented, and their disposal under the Preëmption and Homestead laws.

There was, therefore, no serious difficulty in the way of a proper re-adjustment of titles, made necessary by the decisions in the cases cited, if the Land Department had really desired it. Very unfortunately for the rights of settlers, it was the servant of the railways, and singularly fertile in expedients for guarding their interests. Soon after the decision of the case of Newhall *vs.* Sanger, the Acting Secretary of the Interior overruled the practice which had prevailed in the department since the year 1848, as to issuing second patents in lieu of void ones previously issued. He admitted that this practice had the sanction of the Supreme Court of the United States, but he refused to be governed by it, and held that although in the case of Newhall *vs.* Sanger the patent was declared void, yet, in the case of other lands within the limits of the same grant, the patents were voidable only, and not void, till declared so judicially. How completely the department thus became the ally of great corporations and the enemy of the people will more fully appear as I proceed.

Another advantage gained by the railroads had its origin in an opinion given by Attorney-General Black, in the year 1857, when the railroad companies were anxious to obtain certified lists of their lands before they had been earned. Mr. Black held that these lists were simply in the nature of information from the records of the department, and that he could see no objection to issuing them to any person who desired to make a proper use of them, just as any other information would be furnished from the records; and that they could have no influence on the title to the lands. Under this opinion, the department issued the certified lists as requested; but in May, 1880, the Secretary of the Interior decided that when any of his predecessors have certified lands under railroad grants, their acts are final and conclusive, and binding upon him as their successor. He further held that a complete legal title was conveyed by such certified lists, and that the latter were in all respects equivalent to patents. This cut short the work of re-adjustment as to these lands, and left the railroad companies with nothing to fear from the department. They escaped with their plunder; and if we take into account only the companies whose grants have been earned by an honest compliance with their conditions, it may be safely stated that

they have had awarded to them an illegal excess of indemnity lands amounting to more than ten million acres, or enough to make sixty-two thousand five hundred farms of one hundred and sixty acres each. All these lands should have been opened to settlers at the government price, instead of becoming the spoil of corporate monopolies, and sold at rates imposed by themselves.

In this connection, it may be proper to refer to a kindred illustration of the readiness of the Land Department to do the bidding of these corporations. I allude to a ruling of Secretary Delano, in May, 1875, in the case of the Western Pacific Railroad Company *vs.* H. E. Dillingham *et al.*, in which he overruled the previous practice of the department, and held that land within the claimed limits of a Mexican grant, but subsequently excluded from the confirmed limits, or released from reservation by the rejection of the grant claim, was not reserved from a railroad grant made while the Mexican grant claim was *sub judice*. As there are in the State of California nearly six hundred Mexican grants, each including from one to eleven leagues of land, and aggregating within their exterior limits many million acres, it is readily seen that very large areas would fall within the limits of the different railroad grants intersecting that State, and that the question as to whether they were excluded from them or would inure to their benefit on becoming released from reservation, was one in which the railroad companies of California were deeply interested. This ruling of Secretary Delano was made about a year before the decision of the case of Newhall *vs.* Sanger, which showed it to be unauthorized, and made with the knowledge that the point involved in his action was then before the Supreme Court. But he was faithful to his employers, and prosecuted his work with such dispatch that before the decision was announced many thousands of acres were patented to the California railroads; and having the patents, and the possession of the lands covered by them, they are now in the same condition as the companies that obtained the illegal excess of indemnity under the ruling of the Secretary of the Interior in 1880, already referred to. After the lapse of seven years they are still holding on to their booty, save as to the particular tract involved in the case of Newhall *vs.* Sanger. After the decision in that case, the Commissioner of the General Land Office suspended, or pretended to suspend, the practice of awarding such lands to the California roads; and in his annual

report for 1879, as already shown, he stated that suit had been instituted against the Western Pacific Railroad Company by the direction of the Attorney-General. But it turned out that, on the motion of the railroad company, this suit was dismissed, because the purchasers from the company had not been made parties. No other suit has been instituted to set aside any of the numerous patents illegally issued for lands embraced within the exterior limits of this or any other Mexican grant holding the same *status* as the land in the case of Newhall *vs.* Sanger. These "voidable" patents can thus only be set aside by judicial proceedings, while such proceedings have been abandoned by the Government, after all its pretended preparation, leaving the railroads the masters of the situation, through the game of fast-and-loose which has been played for their benefit.

But they were still exposed to possible danger under the adjudications referred to, and naturally felt the need of some further security. This they found in an opinion of Attorney-General Devens, dated June 5th, 1880, and asked for by Secretary Schurz, as "an authoritative expression of his views." Although the distinguished secretary is not a lawyer, he is uncommonly skilled in the use of English words and perfectly familiar with their import, and it seems a little remarkable, therefore, that he should have found it necessary to ask for this legal advice, in view of the clear and unmistakable language of three decisions of the Supreme Court of the United States on the very question now submitted, with others, for interpretation. But the opinion of the Attorney-General is still more remarkable than the request of the Secretary, and cannot fail to surprise every member of the legal profession who may chance to read it. He finds no difficulty in disposing of the decisions of the Supreme Court. Quoting the words of Mr. Justice Davis, in the case of The Leavenworth, Lawrence, and Galveston Railroad Company *vs.* The United States, in which he declared that indemnity could only be allowed for lands within indemnity limits "lost by the action of the Government between the date of the grant and the location of the road," he says that this "is a dictum entitled only to the weight which is given to the dicta of eminent judges." He then refers to an unreported opinion of Mr. Justice Harlan, in the case of the Madison and Portage Railroad Company *vs.* The Treasurer of the State of Wisconsin, in the Circuit Court of the United States for the Western District of that State, in which it

is stated that "deficiencies in place limits, caused by sales or preëmptions previous to the location of the route, whether before or after the passage of the act, may be supplied from the indemnity limits." But the principle thus affirmed was not involved in this case, except as a side-issue. Several points were decided; and the opinion, which I have before me, is of considerable length. The language quoted occurs in the latter portion of it, where the Court was considering the question whether "The Wisconsin Railroad Farm Mortgage Land Company," as the successor of "The La Crosse and Milwaukee Railroad Company," was entitled to lands under the grant made by Congress, June 3, 1856, or under that of May 5, 1864. The Court held that the right of the said "Farm Mortgage Land Company" was under the former grant. The proper interpretation of the indemnity clause of the Act of 1856 was not before the Court, and the statement of Justice Harlan, which I find written on the margin of the printed opinion, is, therefore, a mere "dictum." The opinion, moreover, discloses that the case was to be appealed to the Supreme Court of the United States for final adjudication; but the Attorney-General says, "in view of these conflicting opinions, it would seem to me that the safer course for the department would be to return to its original construction"; and the department promptly acted upon this advice, and still continues to stand by the railroad companies in their work of plundering the people through the forms of law. The Attorney-General does not discuss the question decided by the Supreme Court. He takes no notice of the clearly expressed and impregnable principles on which Justice Davis bases his opinion, merely referring to a brief passage, which he called "a dictum," while himself appealing to the mere "dictum" of an inferior tribunal, in a case which was to be appealed to a higher court. The Secretary, more than keeping pace with the Attorney-General, not only accepted this opinion as better authority than that of the Supreme Court,—although it was merely advisory,—but added the words "otherwise disposed of" to the specifications of prior losses for which the Attorney-General declared indemnity might be allowed—thus greatly enlarging the scope of the opinion. The mischiefs of this shameful prostitution of the Land Department can be more fully appreciated by remembering that it imposes upon the settlers who purchase these indemnity lands a tariff of at least a hundred million dol-

lars more than they would cost at the Government price, and that this sum is drawn from their pockets without any warrant of law, for the benefit of the ravenous monopolies that exact it; while, if the rule of the Supreme Court were followed, a large majority of railroad and other grants could at once be closed up, the remaining lands restored to settlement, and the titles to any unsold lands heretofore improvidently conveyed in excess of their legal grants, recovered by the United States.

But the most remarkable fact remains to be stated. The Land Department, having procured the opinion of the Attorney-General justifying this wholesale plunder of the public domain, is still not satisfied. The opinion, it should be remembered, follows the decisions of the Supreme Court as to the specific case of reserved lands. It admits that for them no indemnity can be allowed. But the department disregards this opinion in the interest of the railroads when it becomes an obstacle to their purposes. I understand that the Atchison, Topeka and Santa Fé road has been allowed an illegal excess of indemnity for lands reserved at the date of its grant, amounting to about eight hundred thousand acres, according to the principle affirmed in the case of The Leavenworth, Lawrence and Galveston Railroad *vs.* The United States. Of this excess more than four hundred thousand acres have been awarded contrary to the opinion of the Attorney-General, and since it was given. This road had received four hundred and eighty thousand seven hundred and seventy-seven acres of land before the decision in the case referred to was rendered, having before received two million two hundred and seventy-four thousand six hundred and eighty-six acres; and a large additional allowance, it is understood, will soon be made, notwithstanding previous illegal excesses carelessly awarded before the department required the company to designate the tracts in lieu of which it claimed indemnity. The Kansas Pacific and the Missouri, Kansas and Texas Railroad companies, in Kansas, have each received an illegal excess of more than one hundred thousand acres, by treating land reserved at the date of the grant as the subject of indemnity, while the aggregate of lands thus illegally held by Kansas railroads would probably much exceed a million acres. This amount is increasing from year to year as the work of adjustment proceeds, and very little attention seems to be paid to the decisions of the Supreme Court or the opinion of the Attorney-General, when

either stands in the way of the roads. Of course, no effort is being made to restore these lands to the United States; and nothing but an act of Congress, imperatively requiring a re-adjustment in the case of each grant, will meet the difficulty.

I pass to other facts equally significant and startling. All acts of Congress, making grants of land for railroad or other purposes, within the mineral regions of the country, expressly reserve mineral lands, which are held for disposal exclusively under the laws making provision therefor. When the character of the lands so reserved is controverted, the question is usually adjudicated on the application of the railroad companies, whose vigilance and influence give them a decided advantage; and if the land is adjudged to be non-mineral, the railroads take it, notwithstanding the fact that it was expressly reserved from the operation of the grant, and was subject to homestead and preëmption settlement the moment the adjudication was made. This has been done in the case of the Central Pacific and other great roads passing through the mineral districts, and it is as open a defiance of law and as flagrant a wrong to actual settlers as the appropriation of Mexican grants and Indian reservations already referred to, or the award of indemnity for lands never granted. The claims of the railroad companies are always recognized by the Government as paramount, while the settlement of the public domain and the legal rights of the citizen seem to be regarded as matters of little moment. The Land Department adopts the principle that a railroad grant is an adverse claim to lands excepted from it, and in behalf of the company construes the exception strictly and the grant liberally. Settlement claims are strangely treated as contests, and the settler is required especially to notify the railroad company of his application to enter or make proof, just as if it were the owner of the public domain. Notice by publication is not sufficient notice to a railroad. If the company does not appear, or does not desire to contest, it makes no difference. It is regarded as a contest in any event, and the settler must run the gauntlet of the special rules governing contests, which have been devised in the particular interest of the company, instead of allowing him the unhindered assertion of his rights under the laws of the United States, and requiring the company to make out its claim affirmatively under its grant. Every presumption is against him, and no mistakes are ever made in his favor. The rule is

different in cases involving the title to school lands, for there no great corporation is interested.

The same principle is applied to the large class of cases where settlements have been made on lands within the limits of a grant prior to the date of the granting act, and are subsequently abandoned. The lands in such cases become public lands, and are open to settlement by other parties, because they were reserved from the grant and have reverted to the Government. But in nearly all such cases the railroad companies appropriate them, and the perfectly unquestionable rights of the settlers are denied. The law is openly defied, and thousands of settlers have thus lost their lands and improvements. The same rule is applied under the Amended Homestead Act of 1864, permitting soldiers in actual service to make their affidavits of intention to claim the land selected by them before a commanding officer. Great numbers of soldiers availed themselves of this privilege, hoping to secure a home for their families after the termination of their service. But they did not always return, and their families, in some instances, could not move on to the land. For these and kindred reasons, the law could not always be complied with, and the entries were canceled. Such entries, however, while existing on the records, reserved the land under the general rules of law applicable in such cases. But, in the year 1879, the department ruled in one of these cases that the soldier's entry was *primâ facie* invalid in its inception, and therefore that it did not operate to except the land from a railroad grant. All the lands covered by these entries had been reëntered by others after the previous entries had been canceled. For fifteen years, settlers had been taught by practice and precedent to believe that second entries, made after the cancellation of the first, would be respected. They did not know that railroad companies had rights that were denied to the citizens, but they were undeceived by this decision; and those to whom it applied lose their improved farms, which go to the railroads, while its application has been made to govern a much larger class of cases than that of the precise one decided. In cases that have arisen since this decision was rendered, the Land Department has volunteered to order hearings for the benefit of the railroad companies, and has required the present settler to prove, affirmatively, the validity of the former entry. In these and kindred cases, however, the rulings of the department have not been uniform. Quite

recently, as I learn, they have been more favorable to settlers; but they have very generally been against them.

The conduct of the department in the illegal withdrawal of railroad lands is of the same remarkable character. Until the numbers of the sections to be withdrawn are known by the survey, and the map thereof showing such sections is received at the local land office and marked upon the record, and notice thus given to the world of the appropriation, the withdrawal of the land is not operative, and the lands may be entered by any legal applicant. Settlers on them, prior to such legal withdrawal, are expressly protected by law. But this law is set aside by the department, and many thousands of settlers have thus been robbed of their homes. Formerly, all lands within railroad limits were withdrawn as soon as the granting acts were passed, and before anything had been done to attach the grant. This was done on the assumption that the act vested the title to the lands at once, irrespective of the conditions of the grant. In some cases lands have been withdrawn before the act making the grant had passed, as in the grants in the northern peninsula of Michigan. The effect of these various withdrawals has been to award many millions of acres to the railroads before any right to them had vested, and to withhold them from settlers whose right was perfect.

But the withdrawal of lands within indemnity limits is equally unauthorized and mischievous, and still more inexcusable. This has been done in every grant. In that made to the Northern Pacific, the Southern Pacific, the Atlantic and Pacific, the Texas and Pacific, and other similar grants, the withdrawal of indemnity lands is not authorized, either expressly or by implication, but is impliedly forbidden in each case by the express provision that all other lands on the line of the roads than those granted by the act shall be open to homestead and preëmption entry. One of the distinctions between lands within the indemnity limits and those granted is the difference in price; the former being sold at a dollar and twenty-five cents, and the latter at two dollars and fifty cents per acre. But both are withdrawn for the benefit of the roads, and the right of settlement thereon denied; while, in every instance of an actual subsequent settlement, and in a majority of instances of prior actual settlement, the lands so occupied by settlers have been awarded to the railroads. The decision of the Supreme Court,

that no rights exist under railroad grants to land within indemnity limits until a selection is actually made, and the laws of Congress expressly reserving such lands, are nullified by decisions and rulings of the Land Department in the interest of the roads, while settlers are thus obliged to pay the companies two dollars and fifty cents per acre for lands not owned by them, and which should be disposed of at the minimum price. These are intolerable evils. It is estimated that more than one hundred million acres remain withdrawn from market and settlement under various acts of Congress; and of this aggregate a very large proportion has been illegally withdrawn as indemnity lands before selection, or as granted lands before the definite location of the line of the road, and could be restored to the public domain without any declaratory act of forfeiture by Congress.

The administration of railroad grants has been singularly reckless and indefensible in other respects. In many instances lands have been certified greatly in excess of the grants. Examples of this kind are to be found in the Cedar Rapids and Missouri River Railroad, which has received an excess of 98,746 acres; the Sioux City and St. Paul Railroad of Iowa, which has received an excess over the possibilities of the grant of 48,390 acres; the St. Paul and Sioux City Railroad of Minnesota, which has received an excess of 350,358 acres; and the Winona and St. Peters Railroad, which has received an excess of 238,007 acres. These examples could readily be multiplied, and the aggregate of such illegal appropriations amounts to several millions of acres. In other cases, the lands certified have been greatly in excess of those actually earned, as in the Mobile and Girard Railroad, in which all the public lands within the grant for its entire length of three hundred miles were certified, and all or nearly all those within the indemnity limits were patented, being an excess over the amount earned of 482,408 acres.

In some cases the roads for which the grant was made have never been constructed, while in others the construction has been partial. The Coosa and Chattanooga Railroad was never built. The grant expired in 1856, but all public lands in odd-numbered sections along its line, thirty miles in width, have been reserved since 1858. There is no official report of the construction of any portion of the Pensacola and Georgia Railroad, in Florida.

Its proposed length was four hundred and eight miles, and a million and a quarter acres of land were certified or patented in advance of construction,—the excess over the amount given for the construction of the road being probably a million acres. The lands granted along the whole length of the contemplated road for twelve miles in width, and eighteen miles of indemnity limits, were withdrawn, in 1857, and so remain. In the case of the St. Louis and Iron Mountain Railroad, in which the grant was made in 1866, the road has not been built, and the grant has been abandoned by the company for a different location; but the lands are still in reservation for twenty miles on each side of the line originally proposed. The grant to the North Louisiana and Texas Railroad expired in 1866. Of the entire line of one hundred and sixty miles, ninety-four are unofficially reported as constructed, and 333,211 acres of land are certified or patented in advance of construction. The Atlantic and Pacific Railroad, with 1,400 miles of unconstructed road, has, in addition to its withdrawal of a belt one hundred miles in width through the territories of New Mexico and Arizona, a withdrawal of sixty miles in width along the line of the Pacific coast in California. The Southern Pacific road has a like withdrawal overlapping the coast withdrawal for the Atlantic and Pacific road; and, although the withdrawal for one company is regarded as invalid, as against the claim of another, it is held in full force and effect as against settlers. Lands within the limits of the withdrawals for both these roads across the State of California, aggregating one hundred and twenty miles in width, though no road has been built and none is being constructed, are still in reservation. In the case of the New Orleans, Baton Rouge, and Vicksburg road, the grant expired in 1876. No road has ever been built under this grant, nor line definitely located. Its proposed length was three hundred miles, and the lands were illegally withdrawn on a preliminary line, and are still in reservation. Under the Texas and Pacific Railroad grant, no road has been constructed, nor line definitely located, but the belt of land withdrawn in 1871, from El Paso in Texas to the Pacific Ocean, being eighty miles in width where the road passes through the territories, are still withdrawn. These illustrations of the management of railroads by the Land Department are, in fact, illustrations of the management of the Land Department by the railroads.

Another administrative abuse of railroad grants has been the frequent and unauthorized changes of location of the line fixed by the companies under the granting act. When a grant takes effect, upon the designation of a particular line, the lands withdrawn from market within the granted limits are understood to be appropriated for its use. Settlements are made and money invested with reference to the fact; but changes of location frequently take place without any authority of law, making a wide divergence from the original line. In such cases, the practice of the department has been to give the company the same land as if no change had been made, thus disregarding the action of Congress and the principle and policy of these grants. Sometimes locations have been assumed and the rights of settlers concluded on a particular line, and afterward an entirely different line has been located, on the theory that the first was preliminary only. In some of the cases the changes have been of great extent in length of the line, reaching as high as from twenty to fifty miles in breadth in Dakota, and a hundred and fifty miles and upwards in Idaho, with frequent and broad divergencies, extending from twenty-five to fifty miles in width, in Washington. In that Territory a withdrawal was made for a branch line of considerable length that was not authorized to be constructed, and to which no grant attached; and the subsequent release of this withdrawal was deemed to justify further changes, and a solid area, one hundred miles wide, remains withdrawn across the southern and central part of the Territory, with a further withdrawal of forty miles in width in Oregon, for the same distance and the same road. Changes in the line of the Northern Pacific Railway have been frequent, and very embarrassing to settlers. Under a preliminary location of the western portion of this road, in 1870, withdrawals were made in that year for forty miles on the Washington Territory side of the line, and twenty miles on the Oregon side, which latter amount was doubled two years later; and the claims of settlers who went on odd-numbered sections of public lands, between the years 1870 and 1872, within a distance of twenty miles beyond the limits of the withdrawal of 1870, have been rejected by the Land Department for the last ten years, on the ground that a reservation created in 1872 took effect two years before it was made!

It is needless to multiply these examples; but I must refer to some further facts which deserve notice. Under the present

organization of the Land Department, the Commissioner has frequently been obliged, by the pressure of his duties, to affix his signature to decisions he had never examined. In controversies between railroads and homestead or preëmption settlers, the examination of the testimony, in the first instance, is confided to ordinary clerks, who are not skilled lawyers, but very frequently men without legal knowledge or experience. The issues to be decided may turn upon difficult questions of law, and affect important public and private interests. A single case may involve millions in value. Questions of fact, to be determined upon *ex-parte* testimony, or the record of preliminary trials before local officers, are passed upon, in many instances, by men unacquainted with the rules of evidence; while it is computed that, in ninety per cent. of all the cases decided, the ruling is final. As a general rule, settlers are not able to employ competent counsel, and have to depend upon themselves and the protection of the department; while the railroad companies always have their attorneys, and of the best class. They have access to the chiefs of divisions, and their constructions of the law are generally impressed upon the minds of the clerks having the cases in charge, notwithstanding the regulations of the department prohibiting conferences between attorneys and clerks, except upon permission. In the final hearing, the corporation attorney goes in person to the General Land Office, examines the papers, and, if necessary, follows the case to the person having it in charge, and argues the superior rights of his company to the land. There are no formal hearings, and the pressure brought to bear upon clerks is the pressure of the power and influence of great corporations, which are practically unopposed; and since the adjudication, in all such cases, must depend upon the preliminary settlement of the facts, it is easy to see the helplessness of the settler. He can only get his land after the most critical examination of his case, and by meeting every technical defect in his claim; while, for thirty years, the practice has been to certify lands in bulk to railroad corporations without definite knowledge on the part of the Land Office as to whether the companies were entitled to them or not, and in utter disregard of the well-settled principle of law, that railroad grants are to be construed strictly against the grantee.

Many of the particular facts I have now recited, touching the reckless and prodigal management of the public domain, are

given on the authority of experienced land-office officials, and may be found in their sworn testimony before the Senate Committee on Public Lands of the present Congress, printed with other evidence, as a part of the report of that committee, which is numbered 362. This testimony has been sharply criticised by the railroad companies, but has not been substantially impeached. It should have the widest publicity, and deserves the serious consideration of every believer in an honest administration of public trusts. The great home department of the Government, which should be the agent and representative of the people, is rapidly becoming an appurtenance of our great railways, and a mere bureau in their service. This is not specially due to the delinquency of individual officials in the Land Department, but to a bad system. It is not the fault of the present chiefs of that department, who are new in their positions, and will have the right to be judged by their record. What is wanted is a thorough reorganization of the machinery and working force of that department, such additions to that force as shall be adequate to the work to be performed, and such an increase of compensation as will bring into the service the highest grade of capacity and integrity. No remedy can be found in simply lopping off the branches of the evils I have attempted to depict; but Congress must strike at their root, and cannot strike too vigorously or too soon. The mischief to be remedied involves the very existence of republican government. The commercial greed of great corporations, reënforced by great landed estates, threatens the subjugation of the people; and the people themselves must organize for the work of self-protection. They have no right to arraign the executive officers of the Government for succumbing to the power of great corporations, while they hold in their hands the sovereign remedy for these evils, and fail to apply it in the selection of honest and capable public servants. Nor does this duty necessitate any warfare against railroads. No one disputes their inestimable value under a just administration of their affairs, and while content to act as the servants of the public; but they are built under charters conferred by the Government, and must be resolutely subordinated to its paramount authority and the welfare of the people.

GEORGE W. JULIAN.

THE PYRAMID OF CHEOPS.

WHEN we look at the ruins of some ancient abbey, Netley, Melrose, or Tintern, at Stonehenge in its solitude on the Wiltshire plains, or the pyramids of the sandy tracts that border on the Nile, near Cairo, the idea suggested to the mind is that of a vast antiquity. The thoughts range back to the time when the builders of the structure before us were living men; and as we picture how generation after generation has passed away since their time, we are forcibly impressed with the nothingness of our lives compared with the life-time of our race. Yet, to the student of science these structures are but young; even the longest-lasting of them is but short-lived. To the antiquarian the pyramids seem built to last forever; the geologist finds in the continuance of the stone mounds for a few thousand years only evidence of the far vaster duration of the time-intervals during which the mounds of nature must remain. Yet even of these he has learned that

> "The hills are shadows, and they flow
> From form to form, and nothing stands;
> Like mists they melt, the solid lands;
> Like clouds, they shape themselves and go."

Knowing this, and that even the everlasting hills remain but for an instant when their duration is compared with the life-times of planets and suns, the astronomer is half disposed to smile at the thought of attributing a hoar antiquity to these monuments, which had not even been built when already the now existing hills were hundreds of times older than these stone mounds will ever be. The geologist, too, finds in the very stone of which the pyramids are built the evidence of æons of years for each day that they themselves have lasted. He sees from the structure of this stone that it was formed in a far-off period (the eocene age)

when a vast sea, probably covering the whole region where the pyramids stand, received slowly a deposit of sandy débris, mixed with the remains of multitudinous forms of submarine and pelagic life. During tens of thousands, hundreds of thousands of years the nummulitic limestone was being formed beneath the waves of ocean. The sands which helped to make that limestone belong to an older formation still, itself formed in turn from still older rocks; and so he looks backward over the oft-times repeated change, a single oscillation only of which is pictured in the words:

> "There rolls the deep, where grew the tree;
> Oh, earth, what changes hast thou seen!
> There, where the loud street roars, hath been
> The stillness of the central sea."

Compared with the vast periods of time thus brought before our thoughts as among the demonstrated yet inconceivable truths of science, the life-time of such a structure as the great pyramid seems but as the duration of a breath. Yet, viewed as men must view the works of man, the pyramids of Egypt derive a profound interest from their antiquity. Young, compared with the works of nature, they are, of all men's works, the most ancient. They were ancient when temples and abbeys whose ruins now alone remain, were erected, and it seems as though they would endure till long after the last traces of any building now existing, or likely to be built by modern men, has disappeared from the surface of the earth. Nothing, it should seem, but some vast natural catastrophe ingulfing them beneath a new ocean, or hurling them down from the slopes of a new-formed mountain range, can destroy them utterly, unless the same race of beings which undertook to rear these vast masses should take in hand the task of destroying them.

Thus viewed, as the most ancient and the most impressive works of the human race, the pyramids have an interest to all students of human history and of human nature. It is impossible to consider carefully any of the works of man without learning something of the events which took place when those works were carried on, and something also of the character, the ideas, and the beliefs of the men to whom those works were due. If we can solve the problem presented by these strange structures, we shall have learned a lesson in the most ancient of all histories;

we shall have gleaned some knowledge worth having about the ways and thoughts of the oldest civilized race whose material records have reached our time.

In undertaking an inquiry of this sort, on which many have already entered and which presents difficulties of the most serious character, it is well that we should note the conditions under which such a problem can alone be successfully dealt with.

In the first place, we must resolutely determine that, when setting forth to find a theory, no theory shall lay hold of us, and, taking possession of our minds, prevent us from duly weighing the evidence for and against not only that theory, but others.

Secondly, we must be prepared to find an element of truth in many of the theories advanced on our subject of inquiry, even though these theories be not absolutely correct.

Thirdly, it should be noticed that the true theory must accord, not with this fact or that, but with all the known facts. It is singular what mistaken notions are held by some on this point, who seem to think that the holder of a theory ought to be ready to concede that some facts are inconsistent with it. A true theory must accord with all known facts; that is, though we may not always be able to show how certain facts are to be explained by it, we must no longer hold a theory after we have been forced to admit that even a single fact is opposed to it or inconsistent with it.

Lastly,—a point I have not seen noted yet,—we should direct our attention first, not to the more easily explained facts, but to those which seem most perplexing and least readily to be interpreted; it is among these that we are most likely to find a key to unlock the mystery of our problem. A theory which explains them can hardly fail to be the true theory; whereas several theories, of which one only can be true—if any is—may explain the ordinary commonplace matters to which many direct their first attention.

Thus viewing the considerations which should guide us in dealing with the pyramids, we proceed to the inquiry, hoping that our solution may not only answer such questions as the antiquarian, the architect, the astronomer, might ask, but may tell us also something of the history and character of the princes and people who built these marvelous structures.

The first and most striking peculiarity in the pyramids, and especially in that one with which we are chiefly to deal, deservedly called the Great Pyramid, is the enormous amount of

labor bestowed on their construction. The mere mass of masonry in the Great Pyramid, as originally built, amounted to nearly ninety millions of cubic feet, or in weight to nearly seven millions of tons. The base covers a space of about thirteen acres, an area considerably larger than that of Lincoln's Inn,—the largest of the London squares. The second pyramid covers about eleven acres, contains sixty-six millions of cubic feet, and the mass of stone-work cannot weigh much less than five million tons. The materials of which all the pyramids are built have been brought from considerable distances,—some greater, some less. To give an idea how little labor was spared, I may mention that, according to Dr. Richardson, the passage leading to the subterranean chamber of the Great Pyramid is lined on all four sides with finely polished slabs of large-grained red granite of Assouan, and Assouan is some five hundred miles from Ghizeh! We are not concerned just here to discuss how much labor and time were given to the construction of the pyramids, to decide whether Herodotus had been truly told that one hundred thousand men worked for twenty years in erecting the first pyramid; or whether those are right who say he meant ten thousand men working for two hundred years (since, they say, one hundred thousand men could not have worked at once on the pyramid); or whether that architect is nearer the truth who, allowing an average of fifteen miles for carriage, and three hundred days a year of ten hours a day for labor, assigned one hundred and sixty-four years as the time necessary for quarrying, elevating, and finishing the Great Pyramid. So far as the significance of the enormous amount of labor involved is concerned, it matters little at the outset whether we consider that more men worked for a shorter time or fewer men for a longer time. It is wonderful and most significant, no doubt, to think of a system by which the rulers of a country could keep together one hundred thousand men working in relays, day and night and every day for twenty years; but it would not be less wonderful or significant to learn that during two hundred years, or for seven generations of rulers and people alike, an army of ten thousand laborers had been constantly kept at work on this one alone of the pyramids of Ghizeh.

We learn, in any case, that the rulers of ancient Egypt possessed despotic power over the people, but not necessarily that the kings possessed excessive power over the aristocracy,

who must, in all probability, have taken part in urging on these stupendous and, at a first view, almost useless labors. We note also that labor must have been cheap, since otherwise self-interest would have prevented Cheops, Chephren, and the rest, from devoting so much of it to these structures. The population of Egypt must at that time have been very great, food very cheap, labor abundant, and (it would seem) the lives of the people of little value either to themselves or in the eyes of their rulers. So far, indeed, as mere labor was concerned, we can hardly speak of the pyramids as costly structures, for probably Pliny was not far from the truth in conjecturing that the rulers of Egypt built the pyramids partly out of state policy, to keep the people in employment,—not, however, "to divert them," as he imagined, "from mutinies and rebellions," but because, as Dr. Zincke suggested, in those days "labor could not be bottled up." Labor was available in such enormous quantities, and so much food was stored up yearly in consequence of a system by which taxes were paid in kind, that practically the laborers and their wants cost almost nothing.

Nevertheless, we must not forget that the erection of the pyramids would have been a costly undertaking, even if the work of ordinary laborers had cost nothing. Apart from mere material, much more than ordinary labor had to be provided. As Hekekyan Bey well remarks: "These pyramids were evidently national undertakings; their plan and execution were decided after mature deliberation; laws were passed and revenues provided to carry out the public decision" (not the popular decision, be it noticed, for the rank and file had nothing to do with the matter) "by the executive authorities."

Let it next be noticed, as among those facts least questioned and most important in considering the pyramids, that they were undoubtedly associated with the religion of the people. This statement, be it observed, includes their unquestioned use as tombs. If there is one thing clear about all the pyramids of Egypt, including the Great Pyramid, it is that they were intended to cover (not merely to inclose) the bodies of the monarchs who had erected them. Chevalier Bunsen says they were "exclusively giant covers of rocky tombs"; and his long study of Egyptian antiquities justifies us in accepting his statement, omitting only the word "exclusively," simply because there is abundant evidence to show that they had other purposes. Mari-

ette Bey is equally positive that they were exclusively tombs, equally likely to be right in considering that, whatever else they were, they certainly were that. "With regard," he says, "to the use to which the pyramids were destined, it were doing violence to all that we know of Egypt, to all that archæology teaches us of the monumental customs of that country, to see in them any other thing than tombs,—tombs, massive, full, everywhere stopped (even in their passages) most carefully, without windows, without doors, without exterior opening." If any doubt could exist as to the tombic character of the pyramids, it should be removed by the consideration that they are surrounded by tombs: as Mariette Bey has well said, "every pyramid is in the middle of a cemetery." M. Chabas, speaking of the tombs around the Pyramids of Ghizeh, says: "A certain number of these tombs were commenced at the same time as the Great Pyramid, and were completed before that colossal monument." Dr. Birch writes thus: "The tombs around the Great Pyramid are those of the princes and other members of the family or time of Khufu" (Cheops or Shofu). Lepsius sees in this cemetery "an official almanac of the Court of Kings Cheops and Chephren, the tombs giving so many names of their officers." Renan says: "The tombs, so numerous in the sands of Sakkara and at the foot of the pyramids, are all dated from the first six dynasties." Mariette Bey states that the Necropolis of Ghizeh "was absolutely closed as early as the time of Teta, king of the sixth dynasty, a hundred years or so after the building of the Great Pyramid." "He has discovered the tomb of a grandson of Snefrou, king of the third dynasty, and several *mastabas* (or chapels exterior to tombs) of the age of Snefrou, and asserts that the age of some of these tombs belongs even to that 'of the predecessors of the founders of the Great Pyramid.'"

But the clear proof thus afforded that the pyramids were mausoleums—chief tombs within whole cemeteries of tombs—proves indisputably also that they were associated with the religious belief of the Egyptians. All that we know of the early, as of the later (but still ancient) religious belief of the Egyptians assures us that it included full faith, of a very material sort, in a future life,—and that it was their faith in a resurrection of the body which led them to provide with such extreme care for the protection of the body. The kings and princes, high priests, chief ministers, generals, governors, court officers.

stewards, and so forth, who provided tombs and cemeteries to protect the embalmed body of each according to his position, but always in a place effectually closed up and removed from all communication with the outer world, did so because they believed it to be worth their while. The body of which they took such extreme care was to be theirs again at some later time; and it was desirable that, when wanted, it should be in good condition; if Pelion would not suffice to protect it, then Ossa must be piled on Pelion to do so. A system was adopted, having direct reference to the religious belief of the Egyptians, by which it was provided that Cheops and Chephren, and all their family, with all the officers of their court and kingdom, should be preserved together, yet each in his proper and appropriate resting-place.

All this, combined with what is known of the religious character of the Egyptian faith in a future life, agrees well with the doctrine of those who find something of the temple as well as of the tomb in the pyramids of Ghizeh. All tradition points the same way. According to the most ancient Egyptian monuments, Cheops, or Shofu, or Khoufou (for his name is given in all these ways), the builder of the Great Pyramid, was a pious king, who planned a temple to Hathor, the virgin mother of the gods, offered images of gold and ivory to the gods, and wrote a book on religious matters, called in these hieroglyphic inscriptions "the sacred book." Close by the Great Pyramid has been found the tomb of "Eimei, the chief priest of the habitations of King Shofu," who Gliddon thinks was in all probability "the architect according to whose plans and directions the mighty edifice, near the foot of which he had once reposed," was built. The name of Shofu is found in tablets of the old copper mine of Mount Sinai, on which he is called "a pure king, a sacred priest."

We may hope then, in examining the best known and most striking facts respecting the Great Pyramid, to learn the nature of the religion of the Ancient Egyptians. Yet in passing, be it remembered (for our guidance as we go, perhaps), that we do know some things about Egyptian religion. We know on the one hand from the religion which the Jews brought from Egypt after their long sojourn there, and on the other from the doctrines and practices which the priestly rulers of the Jews were continually denouncing, that the Egyptian religion included, if it was not founded upon, the worship of the powers of nature, and chiefly of the host of heaven. Throughout the Jewish system of

ceremonial, purged though the Jewish religion was from the grosser doctrines of Sabaism, we recognize astronomical relations. Sunrise and sunset were considered in the morning and evening sacrifices, the movements of the moon and planets in the weekly observances,* the new moon in the monthly festival, still named after her by the Jews, the passage of the sun over the celestial equator ascendingly in the Feast of the Passover, and his passage over the same chief circle of the heavens descendingly in the Feast of Tabernacles, the two great annual festivals of the Jewish ceremonial system. And while this system was enjoined on the Jews by Moses and his successors, the very efforts which they made to divorce the people from the worship of sun and moon and stars show what a hold this worship had taken of the Jewish mind during the time that the people stayed in the land of Egypt. Very intense must have been the Egyptian faith, at that time, in the powers of the heavenly bodies, to have produced such an influence on the people sojourning with them that, despite the hatred felt for them by this people, the influence of their faith remained, strong even against the appeals, the warnings, the denunciations of those who had brought them out of the house of bondage.

We have next to consider the actual structural features of the Great Pyramid: some peculiar to it, others shared, in greater or less degree, by the other pyramids of Ghizeh. We shall not consider minute details, to which too much attention has, perhaps, already been directed, but only those general features which are most striking, and at the same time most instructive.

First and foremost is the care shown in placing the pyramids with their four sides facing the cardinal points. In all the pyramids of Ghizeh this has been carefully attended to, but in the Great Pyramid it has been done with such exceeding care that only the exact instrumental astronomy of post-telescopic days

* The Sabbath, found also in Assyrian sculptures anterior to the time of the Exodus, was manifestly among Assyrians and Egyptians an observance derived from the lunar quarters which gave the week,—the oldest of all time intervals for labor,—and its solemnity was originally due to its association with the planet Saturn, the highest, in the old astronomical sense, of all the planets, and from time immemorial associated with the thought of misfortune and gloom. The slow-moving, dull-looking orb which, according to ancient astrological ideas, ruled that day, was aptly suggestive of solemn rest, if not of absolute ill-luck should work on that day be undertaken.

could have done the work better. The great quadrants of Tycho Brahe would assuredly have given no better results.

That there was an object in this, and that this object was in some way connected with the religion of the builders, can hardly be doubted. But, apart from that consideration, the way in which the thing has been done is worth observing. Even the exclusively tombic theorists (to use Professor Smyth's odd phrase), even those who believe the pyramid was a temple, as well as those who see in it only a mystic meaning, agree that the exact orientation is there, and must have been obtained by very exact astronomical work; so that we are in no sense attacking their views in endeavoring to show how the result was secured.

Now, putting myself in the position of the ancient builders and architects, and trying to see how, with such astronomical knowledge as they undoubtedly possessed, with such means as they had, and as their knowledge of mathematical and optical laws would suggest, they would actually proceed, I have found myself led to precisely such peculiarities of structural detail as we find actually existing within the Great Pyramid. Not one of all the features which have attracted attention, and have been interpreted in more or less fanciful ways, but is found to be essential to the exact orientation of the pyramid,—when it is remembered that not the base only, but the whole structure was to have its faces four-square to the four quarters of the heavenly sphere.

First, the only exact way of squaring the base—a costly way, but cost was no object, and besides, another and all-important purpose was at the same time subserved—was by a slant passage through the solid rock, directed on the pole star of the day at the time of its passing the meridian below the pole (above the pole would have served as well for exact northing, but then the slant of the passage would have been greater). This would suffice for the base, and also as layer after layer was added, provided the opening of the passage at the rock surface was within the base. But after awhile the prolonged passage would reach the northern face of the growing pyramid, and thenceforward the orientation could no longer be corrected by pole star observations through this passage;* yet a resource presents itself by

* Dr. Richardson, one of the few who have descended into the subterranean chamber, says that the sky can be clearly seen along the stone-lined

which this difficulty may be met. If from some point along the passage a reflected beam of light from the pole star (at sub-polar passage) were taken from the surface of still water, and used instead of the direct beam, another passage could be carried up southward instead of northward, and until this in turn met the southern face of the growing pyramid the orientation would be preserved, and might even be made more and more exact as layer after layer was added. Such a passage would, of course, according to the well-known laws of reflection, be inclined at the same angle to the horizon as the other.

This is precisely what we find within the Great Pyramid, the only one, it would seem, where such exact orientation was considered necessary. There is a passage through the solid rock and upward through the masonry of the pyramid, of beautifully fitted stone-work. From the very spot most suited for taking off the reflected beam along another passage, just such a passage is carried, at just the right angle for the reflected beam. At the place where the reflecting surface had to be, the stones are fitted with such exceptional closeness that the peculiarity has been regarded as a piece of profound symbolization. Stones such as would be essential for blocking up the lower part of the descending passage at each observation by the reflected beam (one or two each year would suffice) were found stored in the Queen's chamber at the level of the reflecting surface. (Many of course had been used, and afterward slid down the descending passage to the subterranean chamber, where their fragments remain to this day.) The fitting of these sliding stones (some of which may well, as appears likely, have been used later, expressly to block up the passage) was so perfect that one observer says a knife could hardly be inserted between the stone and the walls of the passage.

But more striking than the outside astronomical character of the Great Pyramid, significant though that is, more interesting than the simple but mathematically beautiful method by which

tube, some three hundred feet long, through which he had descended to that chamber. This shows that even now this long, inclined passage preserves its straightness. He adds — evidently at a venture — that at night the pole star can be seen through this tube. But the tube commands a field of view only some forty-six minutes in diameter, the center of which is less than twenty-seven degrees above the horizon. The pole star descends no lower than twenty-nine degrees above the horizon of the pyramids.

the orientation was secured, is the grand gallery into which the second ascending passage opens. Considering it as it was before the pyramid was completed and closed in after the death of Cheops, this gallery had all the properties which an astronomer desires in a transit instrument. Twenty-eight feet in height, it commanded a long vertical slice of the southern sky, precisely divided in half by the vertical line of the meridian. This would have been of little use for exact time observations if the walls of this lofty gallery (nearly one hundred and sixty feet long), had been aslant, yet the architect would have assured the astronomer (supposing they were not one and the same person), that aslant the walls of such a gallery must certainly be, or it would yield under the pressure of the mighty mass of masonry which was to be placed above it. What, however, do we find? The walls are aslant to suit architectural requirements, but they are vertical to meet the wants of the astronomer. They run up in a series of vertical steps, very shallow measured horizontally, very long measured vertically. Every part of the walls is thus vertical, yet the cross breadth of the long, lofty slice thus cut through the pyramid in the plane of the meridian, diminishes gradually toward the top, insuring perfect architectural stability.

This means more than astronomical orientation; it means astronomical observations, and specially with reference to time. The modern transit instrument (as its name implies) tells the time when the heavenly bodies pass across the meridian; the great pyramidal transit-tube, while as yet its aperture remained uncovered (which we may be sure it did so long as Cheops remained alive), told observers, suitably placed down its length, the time when those same bodies passed the meridian of Ghizeh. So is interpreted the tradition of old, that priests, placed on the top* of the pyramid, announced when this or that orb was passing. Passing where? To Proclus or Diodorus Siculus explanation might have been difficult,—the astronomer sees that passing the meridian was meant, and that, therefore, a meridional instrument, like the grand gallery in the Great Pyramid, must have been employed.

All this accords well with the belief that the Great Pyramid

*Not the top of a nearly complete pyramid, as Flammarion absurdly imagines, setting observers to observe planets and comets, while scarce able to balance themselves on the pyramid top!

was a temple before it became a tomb. These astronomical observations were, in fact, religious observances; the astronomers were priests; their astronomy was star worship. But, if the astronomers were priests, they were also prophets. From them and their kindred in Chaldea have descended to us, not only so much of our ceremonial observances as we have derived from the Jews (so much that it takes an astronomer rightly to frame the calendar of fasts and festivals), but also those astrological superstitions which still bear sway over millions, still influence our language and literature, and if no longer, as of yore, in the ascendant, form even yet potent factors of our civilization. It was not only that they might worship the stars that the kings of Egypt built these temple tombs: their priests were also to read the stars, and, by reading, to rule the stars. The old tradition recorded by Ibn Abd Alkokm, that "in the beginning of the Great Pyramid was a fortunate horoscope," was no mere fable. This tomb-temple was the horoscope of the king-priest. We might infer this from the sacred character attributed to their rulers by the Egyptians; we might be certain in any case that the astronomico-religious observances of which this great temple was the scene during his life-time only, were astrological in their character; but all doubt seems to be removed when we note that after his death the pyramid had no longer a use, save to cover his embalmed body. Enormous though the labor had been that was bestowed upon it, costly the work of preparation, the material, the building, the ceremonials observed upon and within this temple,—all was useless to his successors. The passages within were filled with stones above the tomb of the king in the subterranean chamber; the upper part of the pyramid was completed; a fine marble casing was placed all over it, beginning with the apex, and working downward to the pavement. For centuries after his death not a flaw or crevice existed in the "satin" surface, as the Egyptians called it, of his costly tomb.

The story of the pyramid tells us much of those who built it, of their mode of government, of the wretchedness (as to all that constitutes the dignity of manhood) of the people, and the worthlessness of their lives in the eyes of those who ruled them. It tells us also of their religion, with what full faith they believed in a future life, what powerful gods the heavenly bodies seemed to them. It speaks of their faith in priestly prophecies,

and of the belief of all (save, perhaps, the priests themselves) in the teaching of the star-strewn skies. For my own part, I find a further interest in the thought that those astronomers of old worked like their younger brethren now. Whatever superstition mingled with their labors, whatever errors they may have taught, or been taught, respecting the heavenly bodies and their aspects, I can say, in the words of Oliver Wendell Holmes:

> "I am as old as Egypt to myself,
> Brother to them that squared the pyramids;
> By the same stars I watch. I read the page
> Whose every letter is a glittering world,
> With them who looked from Shinar's clay-built towers,
> Ere yet the wanderer of the midland sea
> Had missed the fallen sister of the seven."

RICHARD A. PROCTOR.

PROTECTIVE TAXES AND WAGES.

THE discussion of protectionism in the United States constantly turns upon questions of wages. The question has two forms. The employed argue that protective taxes will make their wages high. The employers argue that protection is necessary for them, because they have to pay high wages. Here there are two parties, whose interests are as antagonistic as those of buyer and seller, who expect to be both favored at the same time by protective taxes.

The protectionist economists do not hesitate to encourage both wage-payers and wage-receivers to see their interest in protective taxes, and the protective legislator does not shrink from the task of satisfying both antagonistic interests by a single measure. The employé wants wages high; that is, higher than he has been getting,—higher than he could get in another country. The legislator promises him that he shall have them. This threatens injury to the employer, who wants wages low. It will not do to make wages low, however; so the statesman promises to produce the same result by making prices high. It sounds badly to talk of levying taxes to make prices high; so it is affirmed that, after all, protective taxes lower prices. Here, then, we have one and the same device, which makes wages high and low and prices high and low both at the same time. Surely the secret of universal happiness is discovered, if the buyer can give a low value and the seller get a high one, both at the same time. It seems strange, at the first look, that any one should so far insult the public intelligence as to maintain that employers importune Congress for a measure which shall raise wages, and that producers exert themselves to get a law passed which shall lower the price of products; but the real wonder is that some men (practical men, too, be it observed) actually believe this, and affirm it in good faith.

Changes in rates of wages can only be produced by changes in the amount of capital distributable in wages, or by changes in the number of persons competing for wages. If it is alleged that any measure will raise wages, it must appear, upon analysis, that that measure will act either to increase capital or to lessen the number of competing laborers.

The conditions of industry in the United States, as compared with Europe, may be very easily described. In the United States a sparse population has not yet fully taken possession of the continent, and has not yet taken off the cream of its productiveness. It is not even necessary here to pursue painstaking industry: superficial industry pays better. It is not necessary to employ much capital in tilling the ground. No skill and little division of labor are required in agriculture. It follows that every man who has but a pair of strong arms and a minimum of capital can win from a cheap, abundant, and fertile soil, by a little labor, a far greater return than he could, under similar conditions, win in Europe. The great mass of immigration is of persons of the unskilled labor class, because the advantage for them is far greater than for any other class. The ranks of the competitors for wages are continually depleted by those who go to the land. The minimum below which the wages of manual labor can never fall is the grade of comfort which could be won from the land. As this comfort is high, the minimum of wages is high. Hence the status of the American laborer, as compared with any other laborer, is high, because the economic conditions of the country are favorable to the well-being of men.

At this point appears the politician, and denies that we have correctly explained the state of things. According to him, it is the statesman who has caused all the well-being of the American laborer. How? By taxes! The immigrants have not come over here because the untouched earth here offered to the industrious laborer rich reward for his toil. They have not, since they came, created their own well-being by using diligently the chances which nature offered. According to the statesman, the immigrants came because taxes were high here, and they never would have been able to prosper, if the statesman had not carefully kept up a system of heavy taxation.

But this is not all. In the speeches and editorials of the protectionists we are constantly told that the American laborer

ought not to be reduced to some undefined but low grade of comfort. It is assumed that there is some grade of comfort which is due to the dignity and self-respect of the American laborer. The politician sees what this grade of comfort is, and, as he has the wonder-working genie tax under his control, he just gets for the American laborer, by taxing him properly, the suitable grade of comfort. According to this view of the matter, the American laborer makes up his mind what he wants in this world, and serves notice on nature to produce it. If she does not respond, the politician arranges it. Certainly the fallacies which surround this subject are dense and numerous, when men will expose themselves to ridicule by such preposterous notions.

What, then, can taxes do about our welfare?

Taxes on immigrants would not raise wages in the United States, because, in a nation situated as this is, new-comers will go upon the land. They do not add to the competitors in the labor market. They open up new land and add to the capital of the country. They count as hands to help in the work more than they count as mouths to increase consumption.

If taxes on immigrants could not raise wages, certainly no taxes on commodities could do so. Protective taxes aim to keep foreign products out of the country, in order to secure the home market to the home producers. These taxes, therefore, make commodities dear, scarce, and hard to get. But the commodities in the country are what constitute the wages of laborers. If the amount of these commodities is rendered smaller than it might be, how can that raise wages, looking of course not at money wages, but at real wages, or the comfort attainable by the laborer? There is no real propriety in discussing wages apart from other elements in the comfort of the population. Protective taxes lessen the available comfort in the reach of all members of society; they curtail the enjoyment which each citizen might get out of each hundred dollars of income. If I discuss wages as a separate question, I do so only because the question has been so raised, not because I concede that the laborers have any separate interest which can be, or ought to be, discussed by itself. It is pure demagogism to represent it as one of the functions of the Government to make wages high, or in any way to pet the laboring class. The protective taxes press upon all, even upon the protected, who mutually plunder each other. The lowering of real wages, by making commod-

ities scarcer and dearer, is the way in which the wages-class are subjected to their share of the effects of protective taxes.

Let us look next at the effect of protective taxes on the alternative open to the laborer to go upon the land. The protected interests prey upon each other, but they do it unequally. So far, then, the effects of the system are hap-hazard, and they fall out as they may. But there must be somewhere an available resource to meet the total expense of the system. The expense consists of three items: (1) the expense of all the custom-house machinery, which is kept up to *prevent* revenue from being collected, and to establish the barrier which secures the home monopoly; (2) the wages of all the laborers, and the profits on all the capital in the protected industries, for, if the protected industries would not exist but for the tariff, they cannot pay these expenditures; (3) the losses incurred by the protected industries. The only resource available to meet these expenses is the product of the strong and independent industries of the country. In England the agricultural industries were protected at the expense of the manufacturing industries, which were there the vigorous and independent ones. The burden fell on the manufacturing industries in the shape of taxes on food and raw materials. In our case the agricultural industries have to support manufactures as parasites. The burden falls on agriculture in the shape of enhanced prices for clothing, tools, machinery, furniture, blankets, fuel, and transportation. The enhanced prices of all the goods for which agricultural products are exchanged lower the profit of agriculture. Everything which has that effect lowers the value of the laborer's alternative, lowers the minimum of wages, lessens the attractiveness of the land, throws laborers on the market for wages, and so lowers wages. It has been argued that there should be a rule or method for protection, and, if there is to be protection, it would certainly be a great gain to have it regulated by some principle. The proposed rule is to just offset by protective taxes the difference in rates of wages between this country and Europe. If that rule were carried out the protective taxes would just take away from the laborer all that advantage in this country which led him or his ancestors to cross the ocean. Not even a war could permanently take away from the American laborer the blessings which nature here offers to him. I see only one power which could do it, and that is protective taxes, made heavy enough and continued long enough.

The fallacy in the notion that protective taxes make wages high is the same as the fallacy in the notion that trades-unionism makes wages high. Protection and trades-unionism act on the same principle. Trades-unionism inculcates negligence, slackness, and shirking. It teaches the men not to take pains, not to try to excel, not to do good work, and the philosophy of it is that the men should not try to produce, but should try not to produce, on the theory that if things are made scarce and dear and hard to get, that makes "work," and so makes wages high. If that philosophy were sound, all the classes which consume but produce nothing—like soldiers, paupers, idle women, idle rich, gamblers, criminals, and convicts—would be all the time raising wages, and they would lower wages if they should go to work, and not only consume but also produce. On the same philosophy, the Pittsburg rioters were sound economists when they let the city burn down, thinking that it would make work and raise wages. The protectionist and the trades-unionist both think that wages are increased when things are made scarce and hard to get. First they confuse wages with work, and then they confuse work with toil, and they think that they have increased wages, that is, good things to enjoy, when they have only increased the toil by which things are obtained. The truth is that wages are raised only by industry, thrift, temperance, prudence, and economy, producing abundance and increasing capital, not by any dark and crafty devices for producing scarcity and bad work.

We may now look at the other notion,—that high wages make protective taxes necessary. People who believe this must have a queer idea of the economic laws of society. They must think that a blessing and a calamity are not to be distinguished from each other. The wages paid in any industry are only one of the conditions of production, even from the capitalist's standpoint, and it may be only one of the least important. If a capitalist says that he cannot pay the current rate of wages, the first answer that should be made to him is to tell him not to do it then, for he must be misapplying his capital in some way or other. The market rate of wages is set by the supply and demand of labor, and there must be some industries which are able to win profits while paying that rate. But when our petitioners appear before committees of Congress to ask for protection, and allege that they need it because wages are high, when has any one of them ever been subjected to an examination to

learn whether he understands the business he has engaged in, or has an adequate capital, or has faithfully devoted himself to business, or has judiciously located his establishment, or has bought his raw materials wisely, or has adopted new machinery rapidly enough, and yet not too rapidly, or has organized his industry with good judgment, and so on indefinitely? Surely these inquiries would be to the point, when a man pleads for power to tax his fellow-citizens to make up the losses of his business. Wages are one of the essential expenses of any business. If it cannot pay wages at the market rate, it is not a "business"; it is either a play or a swindle. If it is said, as it constantly is, that American industry in general should be protected because American wages are high, the decision is made to turn on a single point when there are a score of conditions of industry which would need to be taken into account. What are the facts as regards cost and convenience of raw materials, facilities of transportation, cost and quality of machinery, climate as affecting industry, character of the people for industry, intelligence, and sobriety, security of property and order under the Government, excellence or otherwise of the tax system? These are the conditions of industry as between nations, not comparative rates of wages.

It is constantly assumed that wages and profits displace each other, and that the employer can make no profits if he pays high wages. The most familiar facts contradict this. There is no connection at all to be established between wages and profits. They may be both high together, or both low together. Indeed, they generally do go together, both high in good times, both low in bad times. One may be high, and the other low. If the laborers are diligent and effective, the employer may easily win greater profits while paying high wages. Therefore, if it be a fact that wages are high here, that fact gives us no ground at all for affirming that protective taxes are necessary.

It is said that we cannot compete with those who pay less wages than we. There are two classes of persons with whom one cannot compete,—his inferiors and his superiors. A physician might find that he could not compete with a laborer in digging a ditch, or with a great financier in managing a bank. Could any tax enable him to compete with the banker; that is, to compete with his superior? On the contrary, if he should

complain that he could not compete with the laborer because he could not afford to employ his time in an occupation which is less remunerative than his own, every one would ask him why then he desired to compete? Now, could a tax enable him to compete with the laborer? Indeed, it could. It could intervene to deprive him of the services of the laborer, and force him to dig his own ditch, abandoning a profession in which he could earn ten dollars a day to spend his time in an occupation worth only a dollar. This last is the only way in which protective taxes enable us to compete. They put us in a position such that we abandon occupations in which we might earn the high American rates, in order to do things which other people would do for us at half the price. Lower wages abroad, therefore, are not a reason for protective taxes, but just exactly the contrary. Our high wages are a proof that we can better occupy our time. They are a proof that we have means of employing our capital and labor, which are highly remunerative; and to make them an argument for protection is like arguing that a rich man needs charity, or a strong man help.

The competitor whom we always fear the most whenever this subject is opened is England. The wages paid in England are higher than those paid anywhere else in Europe. If comparative rates of wages decide whether one nation can compete with another, how does England pay the highest, yet beat them all? If she is able to beat them all because other considerations come in, why could not we beat her, at least in our own home-market with transportation in our favor, although we pay higher wages, because other considerations come in? If there are any laborers in Europe who could, with any justice, be called paupers, they are agricultural laborers. Our farmers raise products by labor remunerated at American rates, send them across the ocean, paying transportation, and beat the pauper laborers in their own market. How can this be if the test of possible competition lies in comparative rates of wages? The fact is, that the long lists of comparative wages which have been published would not have any value at all for this controversy, even if they were trustworthy.

W. G. SUMNER.

SOME ASPECTS OF LIFE INSURANCE.

In all institutions for the sale of insurances on life, life annuities, or endowments,* a risk, either positive or negative—that is, either against or in favor of the institution—is to be considered. The great defect in the early history of the business was that, in fixing the sums to be paid for the benefits, the risks were either not taken into consideration at all, or not settled by any rational rule.

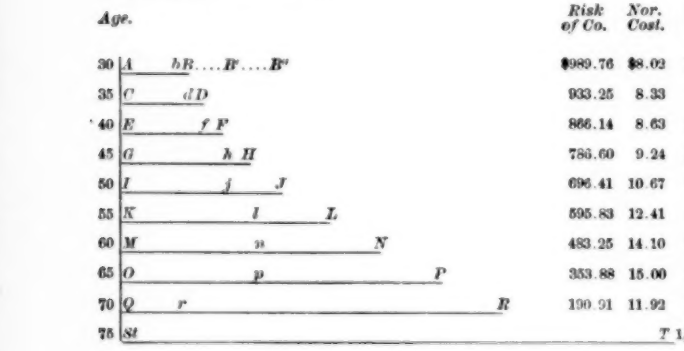
A rational rule is possible, and in fact was substantially discovered and applied by the Rev. Richard Price, a particular friend of Dr. Benjamin Franklin, and who, but for his ill-health, would probably have been the first Secretary of the Treasury of the United States. It has been slightly improved by observation since, and sufficiently for all life insurance purposes.

In all life insurance calculations based on a mortality table, except when, by the old trick of "gross valuation," all the expected funds are discounted into real and existing assets, and the whole term of the policy is in some sense considered as a unit, a policy year is considered as the unit of time during which the risk remains constant, and is to be paid for, or is supposed to be fully paid for, by its amount multiplied by the tabular fraction expressing the probability of dying in that year of age, and discounted one year, if paid in advance. The rate of mortality is always assumed high enough, and the interest low enough, with a reasonable addition to the resulting net premium for expenses, to make such payment generally more than suf-

*Pure endowment is always a negative risk, but practically it is almost always combined with insurance in the same policy, in which case, as will be presently shown, it is simpler and more intelligible to eliminate the negative risks, and consider the combined policy as consisting of a series of yearly insurances, with an increasing bank accumulation, operating every year as so much self-insurance.

ficient. When the advance premium, as well as the face of the policy, is the same from year to year, and consequently interest is deeply concerned, a year is the unit of time on which interest is compounded; but when the yearly premium and face of the policy do not vary, it by no means follows that the company's risk does not vary from year to year.

The table itself, without any calculation, gives the normal cost, at every age, of insuring one dollar for one year, which, if discounted one year on account of advance payment, is sometimes called the net natural premium. But if one at the age of thirty should get insured for his whole life, paying only the natural premium of each year in advance, and should not die till his hundredth year, he would have paid $9,224.73 on a policy for $1,000. But if he should have paid the commuted level premium (by the Actuaries' Table at four per cent.), and lived to the same age, he would have paid only $1,188.04 for $1,000. Expenses are thrown out in both cases, and the mortality is supposed to be exactly that of the table. The difference results from the early excesses of the commuted premiums being accumulated at four per cent. per annum. This is something for the members of coöperative life insurance associations, who pay for death-claims only as they occur, to think of. The pure insurance method has the advantage of endowment insurance only when the insured dies early.



Risk of Co.	Nor. Cost.	Self-Ins.	Nat. Prem. per $1,000.
$989.76	$8.02	$10.24	$8.10
933.25	8.33	66.85	8.93
866.14	8.63	133.96	9.96
786.60	9.24	213.40	11.74
696.41	10.67	303.59	15.33
595.83	12.41	404.17	20.83
483.25	14.10	516.75	29.17
353.88	15.00	646.12	42.39
190.91	11.92	809.09	62.44
		1,000.00	91.89

A whole life policy is not the policy to be taken by any sensible person at thirty, or perhaps any other age. Its premium is calculated as if it were an endowment insurance, payable

at one hundred or previous death; but the terms of the policy do not make it payable till death, no matter how far beyond the age of one hundred that may be. At thirty an endowment insurance for $1,000, payable at seventy-five or previous death, may be had by the payment of forty-five annual premiums, each not quite one dollar greater than the net annual premium for a whole life-policy, being $17.85 instead of $16.97. This is because the excess goes to the self-insurance fund, which decreases the company's risk and reduces it to zero at 75.

A very simple diagram, with a few figures, will illustrate this policy better than pages of words. Let the line AS represent forty-five years, divided by the points C, E, G, etc., into nine half decades. Let AB′ represent the net annual premium, which is $17.85, and AB″ the gross premium, which is usually about $25, the difference being a provision for expenses and excessive mortality, which, if not required, comes back as "dividend." The lines AB, CD, EF—ST, represent the net natural premiums per $1,000 of risk, at the ages thirty, thirty-five, forty, etc. If all the forty-five net natural premiums were paid, the payments would amount to $1,198.23, and with $7.15 a year for expenses, etc., to $1,519.98, and yet there would be no endowment on reaching the age of seventy-five; but to secure the benefit, if death should occur in that year, another net natural premium of $91.89 would have to be paid, with something for expenses. But if the commuted premium of $17.85, with $7.15 for expenses, should be paid in advance every year from the start, then only $1,125 would be paid in all, and an endowment of $1,000 would be secured on reaching seventy-five.

The reason of this is obvious when we notice how the legal four per cent. reserve, at the end of the policy year, or self-insurance, diminishes the company's risk by just so much, so that the lines A*b*, C*d*, E*f*, G*h*, etc., represent the whole normal costs of the company's risk each year at those respective ages, no risk at all being run in the last year. If the lines for the intervening ages were drawn, those representing the net natural premiums for $1,000 of risk would all terminate in a curve drawn through B, D, F, etc., to T; and as representing the normal costs of the company's risks, they would terminate in a curve drawn through the points *b*, *d*, *f*, *h*, etc., to *t*, which coincides with S. Of the whole $803.25 of net level annual premiums paid, it takes $477.04 to pay the normal costs

of the company's risks, leaving $326.21 for deposits in the company's bank; and if this bank account does not grow to $1,000 in forty-five years, it will be because either an interest of four per cent. per annum cannot be realized, or $7.15 per annum will not cover expenses and extra mortality, or because deficiency occurs in both respects. There must, however, be bad, if not dishonest, management to have any failure of the endowment with such payments. I must beg the reader's pardon for being so painfully elementary, but many managers of immense companies deny that there is any banking element in the business at all!

Banking or no banking, equity requires that each policy should contribute to the death-claims of each year in the ratio of the risk the company runs upon it in that year. If there is a bank account (reserve at the end of the policy-year), the sum at the company's risk is the difference between that and the face of the policy, and its value is determined by the natural premium per one thousand dollars at the present age of the insured. If there is no bank account, then the value of the risk is the face of the policy multiplied by the fraction expressing the probability of the insured dying in that year, or the net natural premium per dollar for his present age.

Rev. Dr. Price's great reform in life insurance, by which the natural premiums were so commuted as to necessitate banking, had one serious imperfection. He did not, as he might easily have done, provide any rule for the equitable surrender of the policy. The company was left to exact, as a forfeiture for breach of contract, the whole or such part of the bank accumulation as it pleased. It would ordinarily promise, outside of the policy, in some general prospectus, to pay an equitable surrender value, if applied for, the policy still being in force; but, till some very recent legislation in Massachusetts, no rule of surrender has ever been proposed founded on any principle of equity. The practice, on the contrary, has always been so far the reverse of equity as to make the surrender charge the larger, the smaller the future probable contributions of the policy to death-claims may have become. In other words, the longer a policy-holder has continued to pay, the more it costs him to withdraw. Dr. Price's method of commuting the natural increasing premiums into the level banking premium is simply discounting the future premiums, each by itself, by both mortality and interest, and dividing the sum of the present values by the

present value of a one dollar annuity for the annual premium. By a precisely similar calculation, and equally certain, the present value of all the probable future contributions of any policy to the death-claims is ascertained, and it is technically called "insurance value." On every banking policy fit to be taken, this value grows less from the start, and even on a whole life policy it diminishes rapidly after the age of fifty-eight or sixty. It hardly needs saying, that if the health of an insured person has become impaired, the company can better afford to pay him his full bank account and let him go, than to receive his premium and continue to insure. The theory is, that no impaired life will let a policy lapse, or apply for surrender, and therefore the company must make as much as possible out of the healthy, who lapse or surrender. But the statistics of the business show nothing of the sort. For, after half or more of the policies in any large company have lapsed or been surrendered, the remaining lives do not show a mortality greater than that of the table, even on those lives that have been longest insured. Undoubtedly, in justice and prudence, there should be a surrender charge deducted from the bank account on every healthy life that withdraws, and the balance only should be paid as surrender value,—either in cash down or a cash annuity. And, in view of the statistics, it is hardly possible that the maximum surrender charge need exceed eight per cent. of the "insurance value" of the policy at the time of surrender or lapse. Such a surrender charge is more than any well-managed company is willing to give to procure as much new insurance value.

What would be exceedingly amusing to the public, if commonly understood, is that the executive managers of life insurance companies that hold tens of millions in their banks so wish to keep the insurance and banking undistinguishably mixed that they carefully avoid using or alluding to the terms "self-insurance" and "insurance value." "Oh, no, we don't do any banking," said a life insurance president, with more than $30,000,000 in bank, when asked to give an equitable cash surrender value on a policy which had more than half its face in his bank.

A "business man," dealing in an imperishable commodity, who should refuse to buy back the goods he had sold, when by doing so he could make as large a profit as he did in selling them, would be accused either of stupidity or commercial super-

stition. The life insurance managers who hold in aggregate about $400,000,000 of cash assets in their banks—every cent of it individual "self-insurance"—have yet to show why they should make their business an exception to the plainest dictates of common sense, common honesty, and public convenience. Are they ready to confess that they consider their vast "mutual" institutions, in any sense, mere milch cows for themselves? No intelligent person can deny, or wishes to deny, that the insurance they do, and the banking they do, are both exceedingly valuable, if not indispensable, to civilized society. They have policies in force amounting probably to something more than $1,500,000,000 on about half a million of lives, all of which are reasonably sure of being paid at maturity. But is that any reason why they should pretend to be insuring $1,500,000,000 while they have in bank $400,000,000 of individual self-insurance? They are really insuring but about $1,100,000,000. Their working expenses were returned to the Census Bureau for 1879 as a little over $13,000,000, and the death-claims paid as $23,000,000. Allowing $2,000,000 as the expense of the banking business, it took $11,000,000 of expense to manage the $1,100,000,000 of insurance, or to get, not the $23,000,000, but that sum less the self-insurance, to the widows and orphans. Now, no man knows, for no company ever tells, how much, paid on a policy, comes from the self-insurance fund in bank, and how much from the insurance premiums of the year—the company's bet that the insured would not die in that year. The probability, or reasonable guess, is that about four of the twenty-three millions paid for death-claims came from the bank, and $19,000,000 from insurance. If so, as far as the insurance is concerned, it took $30 to carry $19 to the beneficiary, on the average, or $1,598.70 to carry $1,000. It would seem that a well-established company must do a little better than this to hold the public confidence permanently. Some of the smaller "coöperative" companies, as they are called—even when operating on the crudest of equity—make a better showing than this. The eighth annual report of one such, consisting of 485 members, is before me, in which it took $5,166.47 to carry $4,425 to two beneficiaries, or $1,167.50 to convey $1,000.

One very small swallow does not make a summer, to be sure, but the "winter of discontent" among the holders of 1,261,905 policies returned to the Census Bureau as having lapsed or been surrendered during the decade from 1870 to 1880, must have

made a vast flock of swallows of the sort above alluded to; and whether their economy of operation is more or less than that of the banking insurance companies, plainly it is possible for them to make three dollars pay more than two to the beneficiary. And, summer or no summer, the multiplication of swallows will go on, till the holders of millions in life insurance banks consent to give equitable surrender values, and let the people know exactly how much it costs, on the average, to get a dollar of insurance or a dollar of endowment to the beneficiary.

I can only glance at a question which is now perhaps the most important before the life insurance banks,— which is, How should their reserves be invested? If they cannot be made to yield, on the average, a little more than four per cent., or to net that, a larger part of the premium must be held in reserve,— enough to amount to the same at a lower rate of interest. Is there likely to come any necessity for such a change? So far as I can see, no. The following table, derived from the census, gives the mode of investment and the rate of annual income, under five heads, including about ninety-nine per cent. of the reserves for the year 1879:

Investments.	*Amount.*	*Percentage.*	*Interest per cent.*
Loans on real estate security	$184,753,300	44.86	7.06
Cost value of bonds and stocks	115,302,677	28.00	5.83
Cost value of real estate	63,829,691	15.05	2.45
Premium notes	30,527,151	7.41	6.08
Loans on bonds, stocks, etc.	14,107,157	3.43	5.38
	$408,519,976	99.02	6.15½

The only remark I have to make on this is, that the people who most need life insurance in this country are also most in need of homes in fee simple. They have abundantly proved, in many of our own cities as well as in larger cities abroad, that to escape rent they can well afford to pay an interest of seven per cent. per annum, or higher, on the value of a suburban residence, with a garden, where there is less chance of wife and children dying before they can receive any benefit from a policy. Such persons are safe borrowers, and with an endowment insurance and a small margin, sure to sweep off the debt. Why should not the life company build for them?

ELIZUR WRIGHT.

EDUCATIONAL NEEDS.

PROF. HALL.

As the first principle to be observed in the education of children, I would place hygiene; and, as perhaps first and most teachable of its many elements, proper muscle-culture. Few realize how dangerously near weakness often is to wickedness, how impossible healthful energy of will is without strong muscles which are its organ, or how endurance and self-control, no less than great achievement, depend on muscle-habits. Nearly one-half of the body is made of contractile tissue, controllable by the will; and it is because the brain is developed, while the muscles are allowed to grow flabby and atrophied, that the deplored chasm between knowing and doing is so often fatal to the effectiveness of mental and moral culture. The great increase of city and sedentary life has been far too sudden for the human body—which was developed by hunting, war, agriculture, and manifold industries now given over to steam and machinery—to adapt itself healthfully or naturally to its new environment. Let any of us take down an anatomical chart of the human muscles, and reflect what movements we habitually make each day, and realize how disproportionately our activities are distributed compared with the size or importance of the muscles, and how greatly modern specialization of work has deformed our bodies. The muscles that move the scribbling pen are an insignificant fraction of those in the whole body, and those that wag the tongue and adjust the larynx are also comparatively few and small. Their importance is, of course, not underrated, but it is disastrous to concentrate education upon them too exclusively or too early in life. The trouble is that few realize what physical vigor is in man or woman. Both in Germany and Greece a golden age of letters was preceded, by about a generation, by a golden age of national gymnastic enthusiasm which constitutes, especially in the former

country, one of the most unique and suggestive chapters in the history of pedagogy. Symmetry and grace, hardihood and courage, the power to do everything that the human body can do with and without all conceivable apparatus, instruments, and even tools, are culture-ideals that in Greece, Rome, and Germany respectively have influenced, as they might again influence, young men as intellectual ideals never can do save in a select few. We do not want "will-virtuosos," who perform feats hard to learn, but then easy to do and good for show; nor spurtiness of any sort which develops an erethitic habit of work, temper, and circulation, and is favored by some of our popular sports, but too soon reacts into fatigue. Physical training does not reach its end till it leads the young up to taking an intelligent, and serious, and life-long interest in their own physical culture and development. This is higher than interest in success in school or college sports; and, though naturally later than these, is the earliest form of self-culture in which it is safe and wise to attempt to interest the young for its own sake alone.

A great need for children of wealthy parents is often more exposure, lower temperature in the nursery and less heating coverings when playing out-of-doors, colder baths, etc. Exposure to cold and heat in their season is the only "gymnastics for the unstriped muscles." Excess is dangerous, but so is defect; and when I see, as I often have, children playing kindergarten games in hot rooms, to suit the teacher's sluggish pulses, and remember Fröbel's dictum, "The child is a plant and should live out of doors," the fear is deepened that, to the more distinctively American causes of physical decline (manifest not in the growth and stature of adolescents, but in the absence of staying quality later), such as excitement, overwork, the comparative lack of national sports and games, military service, recreative habits and physical ideals generally, together with a peculiar and exceedingly trying climate, in which the experiment of civilization has never before been made, school-life instead of being corrective sometimes adds another cause, far more serious than those of short-sightedness, spinal curvature, or even color-blindness, important though these may be. "How many of your boys have graduated sound in health to their teeth?" I lately asked the masters of six city grammar schools. Their replies have all ranged between three and fifteen per cent. Though good health is more often said to prevail by both teacher and

pupil, I doubt, from the sallow languor, the anxious, nervous, worrying tone so generally seen in the faces of our brain-worked girls in high and normal schools, if the case is much better there. A four hours' nooning for all primary children with but four hours' school, beginning at eight, and large central halls with movable apparatus, where classes of both sexes, of grammar-school grades at least, should be required to exercise in turn under teachers two hours or less per week, keeping the gymnasium full, and teachers there busied all day as the different classes march to and from it and their schools,—these devices, as in some German cities, would be a great improvement. Progress not great or striking, but in the right direction, has begun here; and the ways and means, on which all depends in education, of doing better than we are doing, are within the reach of teachers who seriously seek them.

Secondly, we must study and follow the child's nature as it actually is. Every step forward in methods since Comenius has resulted from a deeper insight into children's psychic growth and activity. Pestalozzi and Fröbel followed their pupils in their sports by day and to their beds at night, regarding nothing too trivial or too sentimental; studying toys, games, seeking inventories of every object or impression which interested them; lying in wait for their secrets; angling for their confidences; experimenting on them with stories, riddles, songs, and proverbs; and exploring the lines of least resistance into their minds for each element of instruction. Learned and able men, whom universities had honored, devoted themselves to primary teaching, protesting that any one who did not learn far more from the children than he could ever hope to impart to them was not fit to teach. Most of us regard children, even our own, whom we have seen daily for years, in the light of traditional ideas, sentiments, mental categories, etc., commonly ascribed to or implied in them in our juvenile literature and art, and philosophies of mind. The divine instinct of the mother, if not specially instructed, meets little more than physical needs. The few dozen impressions of our own childhood before eight, or even ten or twelve years, are corrupted with what others have told us of our childhood,—with dreams mistaken for realities in the lapse of time,—and are like the filmy tracing of the long decayed seed-acorn of a ten-year old oak tree I lately saw after a land-slide. Knowledge of childhood from memory of our own is as defective as a knowledge of acorns from such traces alone would be.

Individual and untaught tact, intuition, and sympathy have been mainly depended on for a knowledge of the child's soul; and without these no method can be worked. But they only reveal the possibility of something far better. These qualities are apt to be restricted in their field, and to die out after secreting a few dogmas or working out a new rut, while any really high and adequate degree of either is as rare as genius. This, indeed, is felt; and hence those many abstract schematisms of mind (according to Hamilton, Hegel, and many others less known), so often called in to take their place—schemes resembling the adult mind, indeed, but only as a manikin resembles a living body, If one would know physiology, we send him to the laboratory, and put the instruments and the living tissues before him, and do not send him to Galen or Haller, or even to Ludwig's or Hermann's books till later. But a normal-school pupil, who wishes to practice on the juvenile mind, is often given an outline of mental philosophy from a past generation, if not century, and practices teaching mainly on his or her classmates, who act the roles of young children, even to whispering, giggling, etc. The worst result of this method-cram, by which so much time is lost, is that pupils graduate with only the most scanty knowledge of the subjects taught, and with a method behind which they would feel quite confident of concealing their deficiencies in undertaking to teach, as one lately boasted to me he could, anything to any class, at half an hour's notice. They work at and nag their classes till they get or "develop" what is wanted, the pupils learning less often to trace natural order in natural ways, than to catch unconscious hints and suggestions of the word or thought wanted, by a process of mind-reading so subtle that the teacher thinks it a triumph of his method. This is true of far too many of our otherwise excellent normal schools. What we want is careful inventories of what children of successive ages may be safely assumed to know; what they can do; what sets of impressions their minds are busied with most and least hours per day; classifications of common errors in articulation; in understanding the natural objects about them; in the meaning of words; which senses are most teachable; what tastes, beliefs, habits, etc., are common to children and primitive man; the influence of sex, age, and nationality; how the religious, social, and moral instincts grow; when each successive interest may be assumed to be at its height and most available in instruction; how children feel toward pets and toward each other; when does

animism toward flowers, dolls, stars, etc., cease. These, and very many more problems of this sort,—surely no less important than the study of butterflies or the instincts of ants, and surely less complex than the adult mind, for which many widely admitted schemes have been laboriously wrought out,—are now, thanks to the many methods which many sciences have lately brought to bear on psychophysics, ripe for study. How does nature teach and learn, is now our problem.

Thirdly, moral training is needed. Religious instruction, as now given, is neither universal nor pedagogic enough; and virtue has never yet been effectively taught from ethical text-books. Morality is training far more than instruction, and all teaching that passes through the intellect, and affects the will and emotions, has a moral character. So far as the pupils can not only know, but do what is taught, so far as possession ripens into faculty,—whenever any element of memorized, worded, theoretical, or bookish, or passively received, knowledge is made practical, experimental, or industrial,—there is moral gain. On the other hand, wherever the bulk, rather than the degree of assimilation, is measured by examinations, etc.; wherever a curriculum of shreds and patches of many sciences is followed; where the conceit of comprehensiveness, as expressed in seemingly learned abstract allusions, as often in text-books in history and literature, as well as in school compositions, is tolerated; wherever good precepts are allowed to remain peacefully beside bad and discordant habits,—moral weakness is directly cultivated. Yet the moral problem is more commonly what, than how, to teach. The moral value of teaching is, all agree, great; as is also that of the contents of the school reading-books; and we must scrutinize the effect of each historic period and each poetic selection, the character of school music, etc., in our teachers' meetings. This is a higher and larger and later question than how these should be taught. How compactly and spontaneously do the elements of each topic shoot together during that long and epochful adolescent age, when brain-growth seems to concentrate on the "association fibers" which bind the cell-groups of adjacent centers together. With all these and many more open psychic and ethical questions, many of which are more or less ripe for research, one of our greatest needs is an institution where the best educational books which have appeared during the last century can be consulted, and where

schools and children can be systematically observed in the light of what has been done in our own country and in Europe. While other departments of science, far more extensive, are equipped at a dozen centers, there is at present not one man in this country devoting himself to the studies of education with anything like proper facilities, to say nothing of the proper qualifications for such work; and that, too, in a time of educational awakening, deeper and more general than any this country has ever witnessed.

Fourthly, and not to be separated from the principles of teaching, is the need of greater competence and a more professional spirit among teachers. The only way to secure this,—as it seems to the writer,—is more department-teaching. The music-teacher is already more or less professional, and goes from school to school, and teaches only music. Why should not the teacher of arithmetic, reading, geography, etc., be allowed to teach only these studies in several schools, and qualify and pass his examination for higher and higher classes? This method has been very successful in Europe, and would have certain peculiar advantages here. One who has taught geography or mental arithmetic only for ten or twenty years will be sure, if he has energy, to give his work a more professional character in many ways than if he must teach a dozen subjects. Some of the best German professors rose from this work, and the system cannot fail to bring higher and secondary education into closer relation. This system, which must not be carried too far, is one cause of the excellence of the German schools, and of the thorough character of discussions in their teachers' meetings. The effect of a not too frequent change of instructors is stimulating on the children, and a healthful spirit of emulation between the teachers, and sometimes even between gymnasium and university work, results. Complaint of overwork is often heard; but it is often our teachers and their methods that make things hard. If a teacher is full of his subject, and can induce enthusiasm in his pupils; if his facts are concrete and naturally connected, the amount of material that an average child can assimilate without injury is as astonishing as is the little that will fag him if it is a trifle above or below or remote from him, or taught dully or incoherently.

Finally, examinations should come in the cooler months, as is so common in Germany, and not in June, when, with many,

physical relaxation is at its greatest. At our present examination season, or earlier, the nervous systems of even the animals we experiment upon in physiological laboratories have so much less vigor as to be unserviceable for certain scientific purposes. Even if fresh, cool air do not actually increase arterial tonicity, and send the blood inward to strengthen the vital centers, the winter is nature's season for indoor and bookish work, while June days bring languor and give a fresh attraction to out-of-doors that comports ill with the culmination of the mental efforts of a year.

G. STANLEY HALL.

PROFESSOR ADLER.

THE public are growing uneasy. It is feared that the brains of our little ones are overworked in the schools. Physical deterioration is the inevitable penalty of such overwork.

I would suggest, in the first place, that a commission be appointed to visit the schools, and determine how far the evil may be exaggerated — how far it exists. If it is possible to obtain tolerably accurate statistics, why should we depend upon vague conjectures and letters in the newspapers? But assuming, as we have reason to do, that there is ground for complaint, is it logical to cry out against the number of studies attempted in the schools? Might it not be wiser to seek the fault in the method rather than in the matter of instruction? Do we find that the amount of knowledge imparted to the pupils is out of proportion to the faculties of young children, or greater than is actually assimilated in the best private schools of this country and Europe without detriment? If this is not the case, we are led to infer that the cause of the evil is largely in the worry, waste, and tedium which result from bad methods. The children are mentally burdened; hence it follows that they must be more or less physically affected.

Without entering into a discussion of methods, the following points may be suggested: Let not the development of the memory be exaggerated at the expense of the understanding. Let the wholesale system of teaching be abandoned. Let the size of the classes be reduced, so that greater respect can be paid to the individuality of the pupils. Above all, let us have teachers who

are themselves trained in rational methods. Give us the right sort of teachers, and our chief difficulties will immediately disappear.

Judging from the utterances that we often hear, the presumption in many men's minds seems to be that the acquisition of knowledge is a hardship for the young; but what more damning accusation can be brought against the prevailing system of teaching than the fact that such ideas should become current? Who that has observed children has not seen how eager they are for knowledge, what numberless questions they delight in asking, and with what freshness and eagerness their young minds seize upon the facts of the world? If, then, the instruction of the school wearies and repels them, we must not suppose that the intellectual pabulum itself is distasteful, but that there is something in the condiment with which it is seasoned, or in the manner in which it is served, that causes so unnatural a repulsion. The great fact to be borne in mind is that instruction becomes interesting as soon as the self-active reason of the pupil is appealed to, and he is taught to reach results by the exertion of his own thought, instead of receiving a bundle of facts, ready made, from the hand of the instructor. There is absolutely no lesson—not the dry arithmetic lesson, not the reading lesson, not the history and geography lesson—that will fail to become fascinating and delightful to the pupils, if the instruction given be fully saturated with the rational method. The children will then take in knowledge as a hungry person takes in food, as one who is thirsty drinks water from a clear spring.

But there are especially two points to which I desire to call attention. It is well known that, in changing from one kind of physical exercise to another, we experience a sense of relief which is often preferable to entire rest. The same is true of mental exercise, as every student knows. Why not apply this principle to the teaching of the young? If our pupils complain of overwork, this must be due in part to the fact that there is not sufficient alternation in their daily tasks. An excellent means of obviating this difficulty would be to introduce technical instruction and art-modeling into the schools. In the school workshops the pupils would obtain a gymnastic of the eye and hand, practical knowledge of mathematics, refinement of the taste, a new species of moral influence, physical invigoration,

and a welcome change from the purely intellectual part of their instruction. If the hours spent in the workshop are properly intercalated between those spent in the class-room, the pupils will pass with joyous spirits from one to the other; they will do more and better work in both departments than is now accomplished in one alone, and their mental freshness will remain unimpaired throughout the day. The additional charge which the introduction of this system would involve—and this appears to be one of the chief objections urged against it—is in reality by no means so considerable as is commonly supposed. The material used in the school workshop is of the most inexpensive kind. The tools are simple and easily managed, and the graduates of normal colleges, if adequately trained and under proper supervision, ought to be able to impart this instruction without further charge upon the community.*

The second point to which I would refer is, that technical education and art-modeling in the schools would be a means of testing the ability of the pupils in a new direction. The introduction of industrial education into the schools is often urged as a means of fitting the children of the poorer class for their future station, and enabling them to gain higher wages later on. If placed on this ground solely, it is justly resisted by the fraternity of teachers, who insist that the school shall be kept sacred to the enlightenment of the mind and the building up of character, and should not be degraded to serve "the bread and butter interests" of later life. But technical and art education in the schools ought to be advocated for educational reasons chiefly. They are as important for the children of the rich as of the poor; for those who will eventually enter the professions and the higher walks of life gen-

* The beneficial effect of alternate practical labor and mental application is admirably illustrated in the English half-time schools. The pupils of these schools are compelled by poverty to work in the factory during the greater part of the day, and only attend instruction during three hours. But experience shows that they learn as much in half time as other pupils in full time. They are quick, alert, their attention is more easily concentrated, and there is no doubt that their training in the factory has given them these advantages. We do not recommend the sending of children, even of the poorest class, into factories, where they are exposed to horribly injurious influences that more than outweigh any incidental advantage; but we can secure the benefit that arises from the alternation of practical work with abstract study by introducing the school workshops.

erally, as for those who will follow the humblest trade. This educational value must be kept in view. It is because hand and eye education are a new means of brain education, that we are justified in recommending their inclusion in the curriculum of the schools. Instead, therefore, of diminishing the number of studies, we ought rather to increase them. Not in such a way, however, that all studies shall be made obligatory upon all pupils, but so that a sufficient number and variety of tests may be placed at the teacher's disposal for discovering the aptitudes of his pupils, and encouraging each one in the direction in which his individuality points. In the Workingman's School we have seen astonishing instances of young children, who seemed hopelessly inapt in all the ordinary branches of instruction, easily taking the lead in the school workshop, and excelling their companions in the accuracy, finish, and beauty of their results. Is it not true that in any of the public schools such children would have been hopelessly lost? Their repeated failures would have crushed their self-respect, and, perceiving themselves to be despised as dunces, they would have accepted the verdict of their teachers and their whole future might thus have been blighted.

How important is it, then, that we should apply a sufficient variety of tests to the aptitudes of our pupils, and rouse the talents that may be slumbering in the corners of the soul. The profession of the educator is a golden profession, not in its pecuniary recompense, perhaps, but all the more in its substantial value to the state. Let us not listen to the cry of those who would develop only certain faculties, such as can be turned to account in money-getting, and leave undeveloped the total humanity of the children. In dealing with the latter generously, we are but fulfilling the duty which one generation owes to the next; in building them up intellectually, æsthetically, and morally, we are truly building the future of the republic.

In conclusion, since the question of the schools has come before the public, I would add a word concerning the management of our public school system in general. Of what avail, we ask ourselves, are such suggestions as the above, and much wiser ones that may be brought forward by others, unless there is some means of giving effect to what is suggested? The Board of Education, in whose hands is the control of our public schools, fills an indispensable office in watching over the admin-

istration of the school funds, in planning and superintending the erection of new buildings, and in caring for the well-being of the schools generally; and the fact that men of high social standing and responsibility devote themselves to this duty is a most gratifying one, for which we cannot be sufficiently thankful. But the question to which I should like to direct attention is, whether members of boards of education, as a rule, are specialists in the science of education. Are they versed in the principles of pedagogy? Have they the time to become profoundly acquainted with the results of recent research in the educational field? Can they possibly keep abreast of the best kind of educational literature that comes to us from abroad? Are they enabled to follow the course of educational experiments elsewhere, and do they conscientiously, weighing the *pros* and *cons*, decide what is applicable here and what is not? Is it not, on the contrary, true, that the very fact that these gentlemen do occupy high positions, that their time is valuable and their energies engaged in other directions, must preclude them from giving exhaustive attention to the purely theoretical matters upon which they are yet constantly called on to decide?

The question, then, which I put is, whether persons who make a specialty of the science of education — experts in education — should not be allowed to exert some influence upon the course of studies and other like matters in our schools. Far be it from me to recommend that these specialists should be allowed to legislate. The final decision, the authoritative vote, may still remain in the hands where it is at present lodged. What I propose — and does it not seem an obviously just proposition? — is that recognized students of the science of education should at least be allowed a hearing before a board of education, and should be recognized in some official way. It has been suggested by one who is competent to speak on these subjects, that it might be best to appoint a commission of educators, whose duty it should be to visit the schools annually, biennially, or even at longer periods, to inquire into existing evils, to recommend such changes in any direction as they may deem necessary, and to lay their report before the board for action. Who does not remember what an impetus to the course of reform in England was given by the Parliamentary commissions, which have from time to time reported on special subjects. If we had such commis-

sions on education, I am certain that the cause of educational reform would make rapid strides forward. Valuable hints, fruitful suggestions, would be the result of their labors. Their published reports would stir up public sentiment, and boards of education, which are now impeded in their efforts at reformation, would find themselves buoyed up and supported by a healthy and more enlightened public opinion.

What I respectfully submit is that, in the management of the public schools, an advisory commission of educators should have a voice. We allow bakers to bake our bread, and shoemakers to make our shoes; why should we not allow those who make a specialty of the science of education to give us at least their advice in regard to the education of our children.

FELIX ADLER.

PRESIDENT HUNTER.

A GREAT deal has been said of late, in the newspapers and elsewhere, about overwork by the pupils of the public schools. If half that has been asserted be true, it is high time that the remedy should be applied: for any education at the cost of permanent ill-health is too dearly purchased. John Stuart Mill's definition of education is general and comprehensive, and includes physical as well as moral and intellectual perfection. "Education," he says, "includes whatever we do for ourselves, and whatever is done for us by others, for the purpose of bringing us nearer the perfection of our nature." Any system of education that disregards the health of the children is faulty; and, if it injure their health by overwork, it is criminal. The trite aphorism, *Mens sana in corpore sano*, should be the motto of every conscientious teacher and every educational system.

Overwork in the public schools may arise from several causes. First, from the folly of teachers in making the lessons to be studied at home too long; secondly, from the neglect of teachers to thoroughly explain the lessons at the time they are assigned for home study; thirdly, from unwisely establishing a course of study for the schools which must, of necessity, press heavily on pupils and teachers; and, fourthly, from creating and fostering a spirit of unwholesome competition, which drives

pupils and teachers to work for high marks at examination. In addition to these principal causes, several minor ones might be mentioned: the inability of some pupils to study at all, because they have never been taught how to study; the lack of all decent facilities for home study by the children residing in the poorer apartment-houses; and the imperfect classification of the pupils, which, perhaps, entails the greatest evils of all — to wit, worry, terror, and overwork. The pupils placed above their proper grades struggle with their studies as weak swimmers struggle with a stormy sea.

It is no easy task, however, to regulate the work for and in the schools so as to prevent indolence on the one hand, and overwork on the other. The road to learning may be made so smooth and pleasant as to weaken mental activity, or so rough and disagreeable as to create an abhorrence of books and studies. If over-instructed, the pupils may become mere passive recipients of knowledge; and if under-instructed, they may waste their time in futile efforts and worry themselves into ill-health. Recurring to Mill's definition, "Whatever we can do for ourselves," falls under the head of home-study; and, "Whatever is done for us by others," falls under the head of instruction in school. The nice balance of these two will make an almost perfect system of education. One of the rules of good teaching is, "Never tell a child anything that he can discover for himself." Of course, there are reasonable limits and exceptions to this rule. It should not be forgotten that a set "task" exercises an admirable moral influence on a child's mind. Every time that a boy lays aside his top, or the girl her doll, for the purpose of learning to-morrow's lesson, there is in this simple act of giving up a pleasure to perform a duty an education of the will which is vastly more important to the future welfare of the child than the little learning acquired from the school-book. The child may fail next day to recite the lesson. But what of that? An act of self-denial was performed, and a proper effort was made. Even in the poorest quarters of great cities, simple tasks should be assigned for home-work. The child should be trained to self-reliance and self-help, and hence he should be required to do something by his own unaided efforts. Study at home, however, should never be required until the child has reached his tenth or eleventh year. Up to this age he should study in school under the supervision and guidance of his

teacher, and the school time should be divided, as nearly as possible, into three equal parts—one-third for study, one-third for recitation and instruction, and the remaining third for recreation and physical exercise.

But it is of the first importance that a child should be instructed how to study. The question then becomes, When and how should study be commenced? It would be absurd to begin before the child had learned to read in a simple reader of the third or fourth primary grade. The methods of teaching reading in vogue in some places are utterly ridiculous and stupid. The children's minds are occupied in "minding their stops"; in looking out for commas, semi-colons, and periods; in keeping their voices up at some of these points, and in letting them fall at others; while all the time the book may be imperfectly punctuated. By this method the children gain no proper understanding of the subject-matter of the book, but, on the contrary, acquire a "sing-song" style of reading which is anything but agreeable to the listener. This is the elocutionary reading of many schools. What is the main object of the great majority of the people in learning to read? Is it not to receive information? How many of them are ever asked to read aloud after they leave school? How many of them ever become orators? The ability to receive knowledge by silent reading is of the utmost importance—of prime necessity—and this silent reading furnishes the very best means to enable the teacher to instruct the pupils how to study. The teacher should give the children of the primary and lower grammar grades, at least ten minutes for the silent reading of a lesson in the class reading-book; at the expiration of this time the teacher should request the children to mention any words whose meanings they did not know. If any are mentioned, the definitions should be given, if possible, by members of the class; but, in case of failure on the part of the children to do so, the correct meanings should be clearly and concisely stated by the teacher. The children should then close their books, and tell the story in their own words; the errors and omissions should be pointed out by members of the class. The teacher should be very careful to correct all inaccuracies of speech. The habit of using good English at this early period of their lives will do more to cause the children to "speak and write with propriety" than all the English grammars ever published. By means of exercises of this kind, the

pupils' vocabulary will be increased, and their minds enlarged. When the story of the lesson has been told by the children, and the teacher has become satisfied that they understand the meanings of the words, they may then open their books and read aloud. It will be found that the reading is much more expressive, and that it contains much less of the "sing-song." When a child has once learned to receive knowledge by silent reading, it becomes a very easy matter to study geography and history in the higher grades, and, indeed, to learn all his lessons in a very short time. The habit of learning in this way, if once thoroughly acquired, would put an end to the memorizing of unmeaning words, and greatly, if not wholly, check the overwork recently complained of by some of the newspapers and a portion of the public.

Study at home should be regulated according to the social condition of the children. In the poorer localities of great cities, little dependence can be placed by the teachers of even the higher grammar grades on home-study; nevertheless, it ought not to be entirely abandoned. The children should be trained to do something for themselves by their own unaided efforts; but the work required should be small in quantity and simple in quality—assigned, as before stated, for its moral influence rather than for its intellectual value. In the wealthier localities, where the children possess the advantages of homes more or less refined, and of the insensible culture that proceeds from contact with educated parents, the lessons to be studied out of school should never require more than two hours' work even in the upper classes of the grammar grade; and if the classification has been made with care, and the previous training has been thorough, the time for home-study might well be reduced to one hour. At any rate, the first consideration with parents and teachers should be the preservation of the children's health and the prevention of overwork and worry.

Water cannot rise above its level, nor the pupil above his teacher. The great aim of every system of public instruction should be to secure the services of teachers specially trained, precisely as the members of any other profession are trained, to produce the best results in the shortest possible time. Experience has proved that a good education alone is not sufficient to make a man a good teacher. Not infrequently the best scholars are the worst teachers. The efficient teacher needs either natural

aptitude or careful training. The born teacher is as rare as the born poet. Hence the necessity for normal schools. The great and growing states of the Old World, realizing the importance of an economic system of public instruction, have established normal institutions by the thousand. In the United States there are only about two hundred normal schools to recruit the ranks of an army of three hundred thousand public-school teachers. As a matter of course, then, there must be throughout the country many incompetent teachers, men and women, whose highest idea of teaching is to "hear" lessons, previously committed to memory, parrot-fashion, from a text-book. Under such teachers there will always be overwork, worry, disgust, irritation, and, if permitted, frequent allopathic doses of rattan.

THOS. HUNTER.

DR. PUTNAM JACOBI.

MY knowledge of the public schools is derived, partly from personal recollections as a pupil in one of them; partly from professional and personal intercourse with a certain number of teachers and scholars; partly from such general acquaintance with the system as is accessible to every citizen. In regard to the hygiene of the schools, I have had occasion to study it perhaps rather more in the case of the female teachers than of the pupils. The most important infractions of hygienic rules have seemed to me to affect these two classes of persons about equally. This is conspicuously true of the habit, which widely prevails among both, of passing nearly the entire day without food, or with a lunch at once unsubstantial and indigestible. The apparent inability of the female sex to comprehend any fixed relation between food and work is the cause of many of its woes. The habit of working without eating is first contracted at school, and in thousands of cases initiates the dyspepsia and frontal headache which are so readily attributed to excessive mental exertion. The old New England custom of keeping school from nine to twelve, and again from two to four, is certainly much more favorable to health than a single prolonged session from nine to three, with half an hour's intermission for the double purpose of lunch and exercise. Short periods of

work, alternating with periods of recreation, are equally essential to children and to the women who teach them. No one can enter an afternoon school-room without noticing the flushed faces and listless attitude of the pupils, and wondering on what principle, or for what reason, these young things are still chained to their desks.

School-hygiene cannot fail to be defective so long as the main object of school-life is held to be the learning a certain number of lessons. So soon as the problem of education is recognized as bearing upon the development of a dual organism in all its parts, it will no longer be considered proper to devote eight hours a day to the training of the memory, and fifteen minutes to inadequate calisthenic exercise of the muscles. The enormous massing of children in the public schools leads, furthermore, to serious infractions of public hygiene in regard to ventilation, sewer drainage, and the communication of contagious diseases. How far it is at present possible to provide adequately for all the needy children, while well-to-do parents are permitted to send their children to the public schools, seems to me a question requiring serious consideration from both the sanitarian and educational point of view. It is incredible that any real education can be afforded to the large classes now herded together under the care of one teacher. Twenty or thirty children are certainly all that a single brain can pretend to teach; but our public-school classes habitually contain sixty, eighty, and even more pupils.

The vitiation of the atmosphere of the school-room by overcrowding, the nervous strain and worry to the teacher in merely keeping such a class in order, the nervous excitement to the children from prolonged contact with one another in such masses, are all influences antagonistic to health. Another such influence of great importance for the health of both children and teachers is the system of competitive examinations for promotions. It is difficult to see what useful purpose is accomplished by this system. It is certainly rational to select, according to some standard (not necessarily the existing one), the children who have shown most capacity in the grammar schools, to be recipients of more advanced instruction. But it does not follow that children under fourteen should be urged to a pseudo-demonstration of capacity beyond their real powers. That no strain should be imposed on a growing organism is a

postulate that should be an axiom. But it is utterly and necessarily disregarded by any system which engages children in competitive strife. From this they should be steadily discouraged, and really only allowed to do what they can do easily. Effort is then more likely to be directed toward the invention of methods by which, through increased development of power, a previously difficult task may be rendered easy. The development of mental power, that may become available when the pupil deals with new facts, is quite as important as the acquisition of any one group of facts. It is evident that this requires much individualization, at present impossible, in the systematized chaos of the educational machine.

I do not think an opinion of sufficient practical value can be formed in regard to the question of overwork, by estimating the difficulty of the examination papers upon which admission to the colleges depends, and around which the education in the upper classes of the grammar schools centers. What may be perfectly easy for one child, may be immensely difficult for another, whose real capacity may nevertheless not be inferior, only he may require to have been taught in a different way. The system of examination papers, or even of oral examinations conducted by a stranger, however plausible and however proper for adults, is unsuited to children. There is no use in obtaining average or percentage estimates of their ability. Any good teacher with a class of reasonable size, could tell much better at the end of a year what children were fitted for promotion without than with these laborious percentages and cram examinations, which make such an imposing show on paper.

True, some system of control must be provided to constantly test the work performed by so many different teachers. But what is the worth of the test which consists simply in ascertaining how many children can answer the same set of questions, prescribed beforehand as a procrustean rule to which every individual in the class must be adjusted? It seems to me conceivable that the examiner should first inquire of each teacher concerning the subjects toward which attention has been directed, the particular method pursued in the special class, the varying aptitudes and tastes of the different scholars under his or her care, and that the examination should be based on the information so afforded, and thus differ in each case. It should be radically different from examination in professional studies,

which necessitates the acquisition of a certain minimum of information on prescribed topics; whereas the object here is mainly to ascertain the degree of development of the children. Reading, writing, and arithmetic once mastered, the kind of further knowledge to be acquired might vary indefinitely.

In the present system, so far as I understand, little or no scope is allowed any individual teacher for development of individual method, or talent, or originality; all tendency to invention is crushed in the mighty working of the educational machine. Not only so, but, so far as I have been able to observe, the female teachers at least become cowed into an attitude of timid submissiveness absolutely fatal to any independent judgment concerning their own work.

I have been particularly requested to give my opinion in regard to the evil effects of mental overwork. I find it extremely difficult to disentangle the element of mental strain from among the various existing conditions inimical to the health of children. In addition to those already mentioned, I suggest that the one-sidedness of an education addressed almost exclusively to the verbal memory is a serious cause of mental—*i. e.*, of nervous—strains. According to the prevailing system, not only are a large number of intellectual faculties—imagination, invention, judgment, reasoning,* perception—left without systematic training, but the senses, the first avenues of mental impressions, are disregarded altogether.† Memorizing is an effort, and involves strain only when the object to be remembered has not produced powerful impressions on the mind. When it has, the remembrance ceases to be difficult: it becomes inevitable.

Now, it is impossible to make powerful impressions on the minds of children by means of verbal symbols only. Children must be addressed through their senses, including the sense of touch, upon which we are all originally dependent for any conviction of reality in the world around us.‡ When words must

* A certain amount of training of reasoning, however, is afforded in the study of arithmetic.

† With the exception of such training of the eye as is obtained from study of maps. I am told, however, that neither teachers nor pupils are expected to draw maps, as is done in Germany.

‡ Dr. Seguin, Sr., has published a remarkable study of the effect which may be produced even on an idiot brain by systematic training of the sense of touch. In Professor Adler's Workingman's School, handiwork training is adopted as an essential part of a mental curriculum.

be used apart from things or pictures, they should certainly first be employed by the mouth of the teacher before the child is sent to find them in a book. The difference between teaching children orally, and teaching them by means of books, may be compared to that which exists between nourishing a baby at the breast or feeding it on condensed and dead milk. A child does not read a book as an adult does, and few persons take the trouble to detect the grotesque effect which may really be produced on his mind by the phrases he glibly professes to understand. My personal experience in the professional education of adults has shown me an extraordinary prevalence of the habit of reading words without any distinct idea of their meaning—a habit fatal to intellectual integrity. Yet this slipshod habit is largely fostered by the attempt to educate children in huge droves at our public schools.

It seems to me singular that the subject of ethical education in the public schools is for the moment so entirely left out of sight. The somewhat absurd squabbles over the reading of the Bible serve rather to emphasize a tenacious adherence to a name which conceals a real indifference to the thing. Yet surely, education in the principles that should govern the mutual relations of human beings might be expected in schools provided by the State, that expects to permanently dominate these relations. Such education would demand a high grade of intelligence and inventiveness on the part of the teacher. It is not enough to enunciate a precept: the end is to create a sentiment. This can only be done by practical exercises in situations combined or created by the teacher. But what a field for rich and varied activity might here be thrown open!

Recognition of the enormous difficulties of the task assigned to the public-school teacher should be followed by willingness to provide higher compensation, when this task is intelligently and conscientiously performed. So much talent, enthusiasm, training, knowledge, and vigor are required for the adequate performance of the teacher's duty, that the supply of really competent teachers must fall far short of the demand. The apparent excess in the supply is only the result of the low standards of attainment and of the mode of appointment. And here I may touch upon a question that, in my opinion, is worthy of consideration. Is it not strange that, in the city of New York, which employs three thousand female teachers, and undertakes to educate many thousands of female children, there are

no women in the Board of Education or among the school trustees? Not only the financial management, but the inspection of the schools, the appointment of the teachers, the scaling of their salaries, their promotions,—everything connected with their discipline as well as with that of the children,—is in the hands of men, not teachers, not educators, but generally politicians. The same kind of influence as governs the Department of Charities and Corrections rules the Department of Public Education. Is it to be supposed that in this department appointments are always made according to merit, and never by favor?

The London School Board, which has done such remarkable work in the last few years, contains many women, sitting side by side in council with some of the most distinguished men of England. Women of intelligence and leisure can certainly find no better occupation for both than in such wide and thorough study of the principles of education as should fit them for the responsible position of trustees and inspectors of the schools. Teachers who have spent years in faithful service should have the opportunity to bring their practical experience to bear on the discussions of the Board of Education. The fact that women are restricted in the exercise of political rights and influence should be rather an advantage than otherwise. It might be hoped that they would thus tend to counterbalance the influence of political motives, which, it is said, do now not unfrequently sway the decisions of men; and in those bodies presumably removed from political influence,—as the Faculty of Professors at the Normal College,—it seems, to an outsider, at least, perfectly incredible that the line of promotion should not be open to long-tried women teachers, as well as to men.

MARY PUTNAM JACOBI.